

CHARACTER SETS FOR THE 3800 LASER PRINTER

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PREFACE

This catalog is a reference guide for the many character sets available on the 3800 laser printer at SCIP. Its purpose is to assist you in finding the character set(s) best suited for your project. It provides detailed descriptions for the SCIP-supported character sets, as well as four IBM character sets, and furnishes the basic information needed to use them successfully. Some degree of familiarity in using the 3800 is assumed. For general information on the use of the 3800, see the document, USING THE 3800 LASER PRINTER AT STANFORD. If you have any further questions, consulting is available specifically for the 3800 printer.

I. THE FORMAT OF THE CATALOG

The catalog consists of character set descriptions, arranged alphabetically according to the names of the sets. These descriptions have been printed on a single sheet of paper so that you may easily rearrange the order of the descriptions according to your own needs, and that you may easily accomodate future supplements.

There are three aspects to the description of each character set:

(1) First, a character set table is given, headed by that set's title and its "size", measured in WCGM's (this term is explained below in section III). The table itself shows the hexadecimal arrangement of all the printable characters for that character set.

(2) Beneath the table is a brief written description of that set. This description contains notes concerning the design of the characters, recommended FCB settings, as well as suggestions for the use of that character set.

(3) On the reverse side of the page are sample texts employing the character set. Whenever appropriate, each example has been printed at two FCB settings.

To supplement this information, appendices have been added. The first appendix is a general listing of all the character sets available on the 3800, including the sets provided by IBM. This appendix summarizes each set's specifications by listing its pitch (horizontal characters per inch), appropriate FCB settings (vertical lines per inch), and the number of WCGM's it uses. The second appendix provides information concerning the horizontal and vertical dimensions of the various forms available on the 3800. The third appendix is a table giving the relative character set densities.

II. THE SCIP CHARACTER SET SYSTEM

For SCIP users, three types of character sets are available on the 3800. The first are the SCIP supported sets, which are documented in this catalog. These character sets have been developed by the SCIP staff and have been approved for public use. They are identified by a title or name consisting of two letters and two digits. The letters often refer to the type of set, e.g., "CU10" is the Courier style set, "IT12" is an italic set, "BD15" is a boldface set, and so forth. The two digits refer to the pitch of the set, that is, the number of characters per horizontal inch. Hence the set "TN12" is a 12 pitch set, printing 12 characters per inch, based on the IBM "TN" print train.

The names of the second type of set begin with a "U": this identifies them as sets designed by users and implemented by the SCIP staff in order to meet a specific need. While these sets can be referenced by anyone, unlike the SCIP sets they are subject to change without notice. Accordingly you use these sets at your own risk. For further information regarding these sets and the creation of new ones, speak with the 3800 consultant.

The third type of character set consists of those which IBM included in the 3800 hardware. The names of these sets follow no strict convention, although they in most cases consist of three alphanumeric characters, such as KN1, BOA, G11, and so forth. The IBM character sets that have been documented in this catalog are GFC, GF10, GF12, and GF15.

III. POINTS ON THE USE OF THE CHARACTER SETS

When you select a character set or sets for a particular job, you must keep several parameters in mind; otherwise you may jeopardize the success of the printing.

(1) The first factor to consider is the size of the set, measured in modules called WCGM's. The 3800 is designed to generate a character set by loading the character generation modules which that set references. Each character set loads at least one, but not more than four such modules, called writable character generation modules (WCGM). For each printing job no more than four WCGM's may be loaded. Hence it is possible to specify more than one character set in the CHARS statement, but the sum of the WCGM's must never exceed four, otherwise the job will not print. For a more detailed explanation of the WCGM factor, see USING THE 3800 LASER PRINTER.

(2) The parameter that controls the vertical spacing of text of the page, measured in terms of lines per inch, is the FCB (forms control buffer). This buffer regulates the vertical spacing of the printed text on the page. For any of the forms on the 3800, you may stipulate the FCB as 6, 8, or 12 lines per inch. Care should be taken when specifying FCB=12, for at this density the superscripted characters of most character sets will not print fully. Check the

recommended FCB setting included in the description of each character set. Special FCB's can be designed to mix the line spacing on the same page. You should speak with the 3800 consultant for further information.

(3) Another consideration when selecting character sets is the type of form on which the output will be printed. Currently four different forms are available on the 3800.

- (a) FORMS=1181. This is an 11" x 8.5" blue bar paper normally mounted on the laser printer. The default character set for this paper is TN15, and its default FCB setting is 8 lines per inch.
- (b) FORMS=9511. This is a plain white paper measuring 8.5" x 11". It is mounted six times during the day. If no character set or FCB setting is specified, 9511 will print with TN10 at 6 lines per inch.
- (c) FORMS=1281. This is also plain white paper, but is 12" x 8.5" in size. This form is mounted only once each day, and its defaults are the TN15 character set at 8 lines per inch.
- (d) FORMS=BLNK. This is a 15" x 11" plain white paper. Like 1281, form BLNK is mounted once each day. The default character set for BLNK is TN10, and its default FCB setting is 6 lines per inch.

The daily schedule for mounting the various forms is available online in the file DOC#SCHEDULE PUBLIC. Further details on all the forms may be found in DOC#FORMS PUBLIC.

Clearly the forms differ in two important aspects: first, with regard to the length of the horizontal lines, and second, with regard to the number of lines per page. A summary of these specifications is given in Appendix B.

IV. MASTERLIST

There are online descriptions of the SCIP-supported character sets in the SPIRES file MASTERLIST. To obtain a complete listing of these descriptions, issue the commands:

```
CALL SPIRES
SELECT MASTERLIST
FIND TYPE CHARACTER SET
TYPE
or IN ACTIVE TYPE
```

For the description of a particular set, use the commands:

```
CALL SPIRES
SELECT MASTERLIST
FIND NAME aann
           (where "aann" is the name of a set)
TYPE
```

V. THE CHARACTER SET TABLE EXEC

You can obtain your own copies of a character set table. This is done by issuing the following command:

```
EXEC FROM LIB#TABLE PUBLIC
```

You will first be prompted for the name of the character set, then for the forms and the number of copies you want. If the last two digits of the character set's name are not 10, 12, or 15, you will also be prompted for the pitch of that set. Should the character set be one it doesn't recognize, it will ask you if the set has four WCGM's.

VI. SCAN PATTERNS

To print a given character, the 3800 employs a dot matrix that defines that character's appearance. For the SCIP supported sets, these matrices, more frequently called scan patterns, are stored in SYS3.IMAGELIB.SRC. Generally speaking, these scan patterns will be of interest only if you are designing your own character set. To get the scan patterns for a set in your active file, use the command:

```
USE $SYS3.IMAGELIB.SRC#GRAFaann ON CATALOG
```

Again, "aann" would be the name of a specific character set. In regard to the design and implementation of a character set, speak with the 3800 consultant.

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	(	A	B	C	D	E	F	G	H	I	⌈	⌊	⌋	⌌	⌍	⌎
1-	)	J	K	L	M	N		P	Q	R	⌈	⌊	⌋	⌌	⌍	⌎
2-	-	O	S	T	U	V	W	X	Y	Z	⌈	⌊	⌋	⌌	⌍	⌎
3-	0	1	2	3	4	5	6	7	8	9	⌈	⌊	⌋	⌌	⌍	⌎
4-		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	⌈	⌊	⌋	⌌	⌍	⌎
5-	&	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>	<u>N</u>	<u>O</u>	<u>P</u>	<u>Q</u>	<u>R</u>	!	\$	*)	;	-
6-	-	/	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>	|	,	%	_	>	?
7-	◊	^	ˆ	ˆ	ˆ	\$?	°	√	'	:	#	@	'	=	"
8-	~	a	b	c	d	e	f	g	h	i	†	‡	≤	⌈	⌊	→
9-	□	j	k	l	m	n	o	p	q	r	▷	◁	⊞	⊟	±	←
A-	-	˜	s	t	u	v	w	x	y	z	⊞	⊟	⊠	⊡	≥	°
B-	α	ε	ι	ρ	ω	■	x	\	÷	•	▽	△	⌈	⌊	≠	|
C-	{	A	B	C	D	E	F	G	H	I	⋆	⋇	⋈	⋉	⋊	⋋
D-	}	J	K	L	M	N	O	P	Q	R	⋈	⋉	⋊	⋋	⋌	⋍
E-	\	*	S	T	U	V	W	X	Y	Z	⋈	⋉	⋊	⋋	⋌	⋍
F-	0	1	2	3	4	5	6	7	8	9	!	▽	△	⊞	⊟	⊠

AD10 is a 10 pitch character set specifically for documentation of APL. This set contains standard Roman, majuscule italic, and underscored majuscule italic letters. In addition to the usual APL characters, AD10 has graphic characters in a heavy font for formatting. A special translation must be made in order for the special characters of this set to print.

SUGGESTED FCB: 6 or 8 lines per inch, but this set prints best at FCB=6.

SUGGESTED USE: Use this set when printing APL workspaces or when preparing APL documentation. For assistance, speak with the 3800 consultant.

COMPARE: Two other APL sets are AI10 and AP10. Of these, only AD10 uses four WCGM's.

CHARS=AD10 FCB=8

```

V Z←EASTER YS;C;EPACT;G;N;X;Y
[1] ACOMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2] AADAPTED FROM KNUTH, VOL. II.
[3] AYS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4] YS←(2↑(PYS), 1 1)PYS
[5] S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⌈IO⌋])[;⌈IO+1]
[6] →0×1PZ←(33>⌈Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7] X←S×2-⌈0.75×C+1+⌈0.01×Y
[8] EPACT←30|20+(S×10+⌈0.32×C-15)+(11×G+1+19|Y)+X
[9] N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+⌈1.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌈1+N), ', ', ⌈1↑Y
[14] V
```

CHARS=AD10 FCB=6

```

V Z←EASTER YS;C;EPACT;G;N;X;Y
[1] ACOMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2] AADAPTED FROM KNUTH, VOL. II.
[3] AYS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4] YS←(2↑(PYS), 1 1)PYS
[5] S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⌈IO⌋])[;⌈IO+1]
[6] →0×1PZ←(33>⌈Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7] X←S×2-⌈0.75×C+1+⌈0.01×Y
[8] EPACT←30|20+(S×10+⌈0.32×C-15)+(11×G+1+19|Y)+X
[9] N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+⌈1.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌈1+N), ', ', ⌈1↑Y
[14] V
```


	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	⋄	.	<	(	+	|
5-	&	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	!	\$	*)	;	-
6-	-	/	<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	|	,	%	_	>	?
7-	⋄	^	..	†	‡			°	√	`	:	#	@	'	=	"
8-	~	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	†	‡	≤	Γ	ℓ	→
9-	□	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	▷	◁	≡	∘	±	←
A-	-	~	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>	∩	∪	⊥	[≥	°
B-	α	ε	ι	ρ	ω	■	x	\	÷	•	▽	Δ	τ	]	≠	|
C-	{	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>	★	✱	ℒ	Φ	Υ	⊗
D-	}	<i>J</i>	<i>K</i>	<i>L</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>P</i>	<i>Q</i>	<i>R</i>	⊠	!	Ψ	⋈	⊞	⊡
E-	\		<i>S</i>	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>	<i>X</i>	<i>Y</i>	<i>Z</i>	⁄	⁄	ℋ	⊙	⊛	⊜
F-	0	1	2	3	4	5	6	7	8	9	|	▽	Δ	⊗	⊛	⊜

This 10 pitch, APL character set has been designed with the special APL characters in the standard positions. It has minuscule and majuscule italic characters, as well as underscored majuscule italic letters. In order to print the APL symbols, a special translation must be made.

SUGGESTED FCB: Prints best at 6 lines per inch.

SUGGESTED USE: Use this set for printing APL workspaces. Since it loads three WCGM's, it is possible to use this set with another that uses one WCGM.

COMPARE: This set should be compared to AD10, the character set for APL documentation, as well as to AP10.

CHARS=AI 10 FCB=8

```

▽ Z←EASTER YS;C;EPACT;G;N;X;Y
[1]  A←COMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2]  A←ADAPTED FROM KNUTH, VOL. II.
[3]  A←YS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4]  YS←(2↑(PYS), 1 1)PYS
[5]  S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⌈IO])⌈;⌈IO+1]
[6]  →0×1PZ←(33>⌈Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7]  X←S×2-⌈0.75×C+1+⌈0.01×Y
[8]  EPACT←30|20+(S×10+⌈0.32×C-15)+(11×G+1+19|Y)+X
[9]  N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+⌈1.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌈1+N),', ',⌈1↑Y
[14] ▽
```

CHARS=AI 10 FCB=6

```

▽ Z←EASTER YS;C;EPACT;G;N;X;Y
[1]  A←COMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2]  A←ADAPTED FROM KNUTH, VOL. II.
[3]  A←YS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4]  YS←(2↑(PYS), 1 1)PYS
[5]  S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⌈IO])⌈;⌈IO+1]
[6]  →0×1PZ←(33>⌈Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7]  X←S×2-⌈0.75×C+1+⌈0.01×Y
[8]  EPACT←30|20+(S×10+⌈0.32×C-15)+(11×G+1+19|Y)+X
[9]  N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+⌈1.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌈1+N),', ',⌈1↑Y
[14] ▽
```

AP10 / 3 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	⋄	.	<	(	+	|
5-	&	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>	<u>N</u>	<u>O</u>	<u>P</u>	<u>Q</u>	<u>R</u>	!	\$	*)	;	~
6-	-	/	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>	|	,	%	_	>	?
7-	⋄	^	''	⋄	⋄			°	√	'	:	#	@	'	=	"
8-	~	a	b	c	d	e	f	g	h	i	†	‡	≤	Γ	ℓ	→
9-	□	j	k	l	m	n	o	p	q	r	⋄	c	⋄	o	±	←
A-	-	~	s	t	u	v	w	x	y	z	n	U	ℓ	ℓ	≥	°
B-	α	ε	ι	ρ	ω	■	x	\	÷	•	∇	Δ	τ	ℓ	≠	|
C-	{	A	B	C	D	E	F	G	H	I	★	∇	ℓ	Φ	Υ	⋄
D-	}	J	K	L	M	N	O	P	Q	R	ℓ	!	ψ	⋄	□	⋄
E-	\		S	T	U	V	W	X	Y	Z	ℓ	ℓ	ℓ	⋄	⋄	⋄
F-	0	1	2	3	4	5	6	7	8	9	|	∇	Δ	⋄	⋄	⋄

This 10 pitch set is designed for printing APL texts, and is the local implementation of IBM's APL/EBCDIC 192 conversion option. It is a standard APL set, meaning that all the APL characters are in the standard positions. A translation must be made in order to print most of the characters unique to APL. Note that AP10 includes upper- and lowercase letters, as well as underscored uppercase letters of the Gothic style.

SUGGESTED FCB: 6 or 8 lines per inch; however, FCB=6 is recommended.

SUGGESTED USE: This set is for the printing of APL workspaces with 10 pitch letters and characters.

COMPARE: The character set AD10 is for the documentation of APL, and contains italic characters. AI10 is a non-standard implementation of the IBM 192 character set.

CHARS=AP10 FCB=8

```

▽ Z←EASTER YS;C;EPACT;G;N;X;Y
[1]  A←COMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2]  A←ADAPTED FROM KNUTH, VOL. II.
[3]  AYS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4]  YS←(2↑(PYS), 1 1)PYS
[5]  S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⊖IO])[;⊖IO+1]
[6]  →0×1PZ←(33>L/Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7]  X←S×2-10.75×C+1+10.01×Y
[8]  EPACT←30|20+(S×10+10.32×C-15)+(11×G+1+19|Y)+X
[9]  N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+11.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌊1+N), ', ', ⌈1↑Y
[14] ▽
```

CHARS=AP10 FCB=6

```

▽ Z←EASTER YS;C;EPACT;G;N;X;Y
[1]  A←COMPUTE EASTER FOR YEAR Y, OPTIONAL STYLE S.
[2]  A←ADAPTED FROM KNUTH, VOL. II.
[3]  AYS MAY ALSO BE A VECTOR OF YEARS OR AN ARRAY OF YEARS AND STYLES.
[4]  YS←(2↑(PYS), 1 1)PYS
[5]  S←(Y>1922)∨(1583)^(YS,1752<Y+YS[;⊖IO])[;⊖IO+1]
[6]  →0×1PZ←(33>L/Y)/'EASTER WASN'T CELEBRATED THAT EARLY.'
[7]  X←S×2-10.75×C+1+10.01×Y
[8]  EPACT←30|20+(S×10+10.32×C-15)+(11×G+1+19|Y)+X
[9]  N←44-EPACT+S×(EPACT=24)∨(EPACT=25)^G>11
[10] N←N+30XN<21
[11] →0×11≠1↑PZ←N
[12] N←N+7-7|N+7|X+11.25×Y
[13] Z←'EASTER ON ',((6×30.5-N)↑'MARCH APRIL '), (⌈1+31|⌊1+N), ', ', ⌈1↑Y
[14] ▽
```

BD10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(	+	|
5-	£										!	\$	*)	;	-
6-	-	/									|	,	%	_	>	?
7-	^									˘	:	#	@	'	=	"
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≠)	±	▪
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	l	≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ	l	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		§	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This is a 10 pitch, boldface character set, containing majuscule and minuscule letters. The letters are slightly shorter than those of a standard 10 pitch set, such as TN10, so as to allow attractive printing at two FCB settings.

SUGGESTED FCB: Can be used well at either 6 or 8 lines per inch.

SUGGESTED USE: The boldface characters can be used to emphasize headings and titles. By using the proper carriage control, this set prints well when used with LW10 or TN10.

COMPARE: The characters of BD10 and LW10 are of equal height; compare these dimensions with those of TN10, whose characters are slightly taller. BD10 has a folded uppercase version, BF10, and is used in ML10 and MT10.

CHARS=BD10

FCB=8

I have argued that there is an aspect to the human mind, the unconscious, that cannot be explained by the information-processing primitives, the elementary information processes, which we associate with formal thinking, calculation, and systematic rationality. Yet we are constrained to use them for scientific explanation, description, and interpretation. It behooves us, therefore, to remain aware of the poverty of our explanations and of their strictly limited scope. It is wrong to assert that any scientific account of the "whole man" is possible. There are some things beyond the power of science to fully comprehend.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 8, p. 223

CHARS=BD10

FCB=6

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 8, p. 223

BD12 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-												Φ	.	<	(	+ |
5-	£											!	\$	*)	; ~
6-	-	/										|	,	%	_	> ?
7-	^											˘	:	#	@	' = "
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≠)	±	■
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	Γ	≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ]	≠	-
C-		[	A	B	C	D	E	F	G	H	I					
D-		]	J	K	L	M	N	O	P	Q	R		\$	¶		
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This is a 12 pitch, boldface character set. The characters of this set, although 12 pitch, are the same height as those of BD10. Note that the characters of BD12 are without serifs.

SUGGESTED FCB: Can be used at 6 or 8 lines per inch with good results.

SUGGESTED USE: The boldface characters are useful in giving higher visibility to headings and titles, or when a text printed in an especially heavy font is desired.

COMPARE: See the multiple sets MH12 and MT12, which have BD12 embedded in them. Compare this set with TN12 and HY12 for possible combinations.

The technologist argues again and again that views such as those expressed here are anti-technological, anti-scientific, and finally anti-intellectual. He will try to construe all arguments against his megalomaniac visions as being arguments for the abandonment of reason, rationality, science, and technology, and in favor of pure intuition, feeling, drug-induced mindlessness, and so on. In fact, I am arguing for rationality. But I argue that rationality may not be separated from intuition and feeling. I argue for the rational use of science and technology, not for its mystification, let alone its abandonment. I urge the introduction of ethical thought into science planning. I combat the imperialism of instrumental reason, not reason.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256


```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-
1-
2-
3-
4-          € . < ( + |
5-  &          ! $ % ) ; ~
6-  - /          | , % _ > ?
7-  ^          ` : # @ ' = "
8-  a b c d e f g h i  { ≤ ( + †
9-  j k l m n o p q r  } × ) ± ■
A-  ° s t u v w x y z  l r l ≥ •
B-  0 1 2 3 4 5 6 7 8 9  J 1 1 ≠ ~
C-  { A B C D E F G H I
D-  } J K L M N O P Q R  5 9
E-  \  S T U V W X Y Z
F-  0 1 2 3 4 5 6 7 8 9

```

This is a 15 pitch, boldface character set, with both upper- and lowercase letters. As the serifs are very slight, this set should be considered of the Gothic type.

SUGGESTED FCB: This set was designed specifically for use at 8 lines per inch. At FCB=12 the superscript characters will not print completely.

SUGGESTED USE: To be used when boldface characters at 15 pitch are needed.

COMPARE: BD15 is used in a multiple set, MT15, and has a folded uppercase version, BF15. Refer to TN15 and HY12 as possible sets to be used in conjunction with BD15.

Wherever computer centers have become established, that is to say, in countless places in the United States, as well as in virtually all other industrial regions of the world, bright young men of disheveled appearance, often with sunken glowing eyes, can be seen sitting at computer consoles, their arms tensed and waiting to fire their fingers, already poised to strike, at the buttons and keys on which their attention seems to be as riveted as a gambler's on the rolling dice. When not so transfixed, they often sit at tables strewn with computer printouts over which they pore like possessed students of a cabalistic text. They work until they nearly drop, twenty, thirty hours at a time. Their food, if they arrange it, is brought to them: coffee, Cokes, sandwiches. If possible, they sleep on cots near the computer. But only for a few hours -- then back to the console or the printouts. Their rumpled clothes, their unwashed and unshaven faces, and their uncombed hair all testify that they are oblivious to their bodies and to the world in which they move. They exist, at least when so engaged, only through and for the computers. These are the computer bums, compulsive programmers. They are an international phenomenon.

Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

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Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This a boldface, 10 pitch character set. It is a folded uppercase set, which means that all text in lowercase will print as its majuscule equivalent. This set utilizes the characters in the first WCGM from BD10.

SUGGESTED FCB: Can be printed at 6 or 8 lines per inch.

SUGGESTED USE: To be used when output printed in uppercase with bold characters is required.

COMPARE: BD10 and the description of the characters given there. Also see the multiple sets ML10 and MT10, which also use BD10 characters.

CHARS=BF10

FCB=8

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

CHARS=BF10

FCB=6

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

BF12 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	Φ	.	<	(	+	|
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This is a boldface, 12 pitch character set that employs the characters from first WCGM of BD12. The set is folded uppercase, meaning that all input will be printed automatically in uppercase. No special translation is necessary.

SUGGESTED FCB: BF12 can be used at FCB=6 or FCB=8.

SUGGESTED USE: For use when output entirely in majuscule letters of a bold font is needed. Since this set uses but one WCGM, it can be used together with most other sets.

COMPARE: BD12, from which the characters for BF12 have been taken. Compare the letters of BF12 to those of BF10 and BF15, and note how the appearance of the characters changes with the change of pitch. Also see MH12 and MT12, which contain BD12 characters.

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

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JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-  A B C D E F G H I  . < ( + |
1-  J K L M N O P Q R ! $ % ' ; ~
2-  - / S T U V W X Y Z   , Z _ > ?
3-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
4-  A B C D E F G H I  . < ( + |
5-  J K L M N O P Q R ! $ % ' ; ~
6-  - / S T U V W X Y Z   , Z _ > ?
7-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
8-  A B C D E F G H I  . < ( + |
9-  J K L M N O P Q R ! $ % ' ; ~
A-  - / S T U V W X Y Z   , Z _ > ?
B-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
C-  A B C D E F G H I  . < ( + |
D-  J K L M N O P Q R ! $ % ' ; ~
E-  - / S T U V W X Y Z   , Z _ > ?
F-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "

```

This is a 15 pitch version of the folded, boldface character set. As a folded set, all text printed with BF15 will consist entirely of majuscule letters. This set uses the characters in the first WCGM of BD15.

SUGGESTED FCB: Either 6 or 8 lines per inch; however, 8 is recommended.

SUGGESTED USE: Use BF15 whenever text printed in bold majuscule letters at 15 pitch is required.

COMPARE: See BD15, the source of the characters of BF15. These characters are also used in the set MT15.

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY HEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKE, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BOOIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY HEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKE, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BOOIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											q	.	<	(	+	|
5-		ξ									!	q	9)	;	-
6-		-	/								|	,	9	-)	!
7-			/								k	:	+	6	'	= "
8-			\	}	}	}	}	}	}	}	[		{	(	6	+
9-			}	(.	q	q	)	+	2	}		}	+	0	+
A-		-	+	}	[	]	/	+	<	/	2		L	+	[+
B-		}	[	2	}	+	+	+	'	}	}		+	+]	= -
C-		{	+	E	C	[	E	F	C	+]					
D-		}	.	+	L	+	+	C	F	C	F		+	+		
E-		\		ξ	7	L	\	+	+	2						
F-		(	]	2	3	4	5	6	7	8	9					

BG10 is the 'banner' character set: it contains characters of an especially large size for the printing of headings and titles. Most hexadecimal locations have been assigned either the left or right half of a character or symbol; accordingly, the alphanumeric characters of BG10 are twice the size of normal 10 pitch characters. To print the BG10 characters, you must enter two characters in your input for most single characters of BG10. It should also be noted that the characters of BG10 fill the entire height printing cell; hence it is necessary to double-space all text to be printed with this set.

SUGGESTED FCB: Use only at 6 lines per inch.

SUGGESTED USE: This set has been designed for the printing of banners, titles, and headings. More information about its use is given in the example on the next page. If you need assistance in using BG10, speak with the 3800 consultant.

Most characters of BG10 are a composite of two characters. For each letter of BG10, enter that letter first in majuscule and then in minuscule: hence, by typing in "Jj" at the terminal the single BG10 letter "J" will appear in the printed text.

Let's say you wish to print the title of the following document using BG10:

A Catalog of Character Sets
Available on the 3800 Laser
Printer at the Campus Facility

The first step is to double space your text.

A Catalog of Character Sets
Available on the 3800 Laser
Printer at the Campus Facility

Next you must format the text for the BG10 set. This can be done either manually or by means of a public exec file. To utilize this exec file, issue the command: EXEC FROM LIB#TOBG10 PUBLIC. You will be prompted for the range of lines you wish to have formatted for BG10. Since the exec file is doubling all the spaces it finds in the specified lines, the altered text will be off to the right. By means of a CENTER command you can re-position the lines as you want them. The above text, when formatted for BG10, looks like:

Aa CcAaTtAaLlOoGg OoFf CcHhAaRrAaCcTtEeRr SsEeTtSs
AaVvAaIiLlAaBbLlEe OoNn TtHhEe 3#8#0#0# LlAaSsEeRr
PpRrIiNnTtEeRr AaTt TtHhEe CcAaMmPpUuSs FfAaCcIiLlIiTtYy

Printing this active file with BG10 results in the following title:

A CATALOG OF CHARACTER SETS
AVAILABLE ON THE 3800 LASER
PRINTER AT THE CAMPUS FACILITY

CU10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(	+	|
5-	£										!	\$	*)	;	-
6-	-	/									|	,	%	_	>	?
7-	^										\	:	#	@	'	=
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≡)	±	▪
A-	-	°	s	t	u	v	w	x	y	z		L	┐	|	≥	•
B-	0	1	2	3	4	5	6	7	8	9		└	┘]	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		\$	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

The set CU10 is a 10 pitch, upper- and lowercase character set, designed after the IBM Courier type element. The characters of CU10 have a slightly heavier font than those of TN10 and LW10.

SUGGESTED FCB: Printing at 6 lines per inch is recommended for CU10.

SUGGESTED USE: Text printed with CU10 is highly readable; hence this set is especially well suited for essays, letters, and memos.

COMPARE: Contrast the font of CU10 with those of HY12, TN10, and LW10, whose characters are not quite as bold. Note also that the weight of the CU10 font is much heavier than the font of IT10.

The most famous is Russell's paradox. Most sets, it would seem, are not members of themselves -- for example, the set of walruses is not a walrus, the set containing only Joan of Arc is not Joan of Arc (a set is not a person) -- and so on. In this respect, most sets are rather "run-of-the-mill". However, some "self-swallowing" sets do contain themselves as members, such as the set of all sets, or the set of all things except Joan of Arc, and so on. Clearly, every set is either run-of-the-mill or self-swallowing, and no set can be both. Now nothing prevents us from inventing R: the set of all run-of-the-mill sets. At first, R might seem a rather run-of-the-mill invention--but that opinion must be revised when you ask yourself, "Is R itself a run-of-the-mill set or a self-swallowing set?" You will find that the answer is: "R is neither run-of-the-mill nor self-swallowing, for either choice leads to paradox." Try it!

D. R. Hofstadter, Goedel, Escher, Bach, NY: Basic Books, 1979 p. 20

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D. R. Hofstadter, Goedel, Escher, Bach, NY: Basic Books, 1979 p. 20

CU12 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-												¢	.	<	(+
5-	£											!	\$	*)	;
6-	-	/										|	,	%	_	>
7-	^											`	:	#	@	'
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≠)	±	▪
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	[≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ]	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		§	¶			
E-	\	S	T	U	V	W	X	Y	Z							
F-	0	1	2	3	4	5	6	7	8	9						

This is a 12 pitch, upper- and lowercase character set. Its letters have been designed in the style of the IBM Courier type element.

SUGGESTED FCB: Print at either 6 or 8 lines per inch.

SUGGESTED USE: CU12 prints attractively and is highly readable. Use this set for essays, memos, and letters.

COMPARE: Refer to CU10, which is CU12's counterpart at 10 pitch. Note that the font of CU12 is a medium weight: while it has a heavier font than that of TN or HY12, it is not as bold as the font of BD10.

The technologist argues again and again that views such as those expressed here are anti-technological, anti-scientific, and finally anti-intellectual. He will try to construe all arguments against his megalomaniac visions as being arguments for the abandonment of reason, rationality, science, and technology, and in favor of pure intuition, feeling, drug-induced mindlessness, and so on. In fact, I am arguing for rationality. But I argue that rationality may not be separated from intuition and feeling. I argue for the rational use of science and technology, not for its mystification, let alone its abandonment. I urge the introduction of ethical thought into science planning. I combat the imperialism of instrumental reason, not reason.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256

DN10 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1-	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
2-	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
3-	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
4-		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5-	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
6-	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7-	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
8-		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
9-	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
A-	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
B-	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
C-		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
D-	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
E-	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
F-	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	

This special 10 pitch character set is folded uppercase, meaning that all letters entered in lowercase will print out as their uppercase equivalents. The style of the set is Gothic. This set is for printing down the page, rather than left to right; hence the first line is on the right side of the page and is read from top to bottom.

SUGGESTED FCB: Appears best when printed at FCB=8.

SUGGESTED USE: DN10 is to be used when printing vertically down the page. When using this set, be sure to make the necessary adjustments. For example, if a form normally allows 60 lines per page, when using DN10 you can have a maximum of 60 characters per vertical line of text.

COMPARE: There is a 12 pitch version of this set, DN12, and there are sets which make printing up the page possible, UP10 and UP12.

DN12 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	Q	.	<	C	+	1
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	H	)	:	1
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	-	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	Q	.	<	C	+	1
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	H	)	:	1
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	-	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	Q	.	<	C	+	1
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	H	)	:	1
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	-	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	Q	.	<	C	+	1
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	H	)	:	1
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	-	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This character set is design for printing vertically down the page with 12 pitch characters. DN12 is a folded uppercase set, printing entirely in uppercase. All text printed with DN12 will have its first line in the right-most column of the text block, reading down the page.

SUGGESTED FCB: 8 lines per inch is recommended.

SUGGESTED USE: Use this set for printing down the page with 12 pitch, Gothic majuscule letters. Generally speaking, the DN sets are more readable when used for single-line graphic effects than for blocks of text. Speak with the 3800 consultant for assistance in using this character set.

COMPARE: DN10 is the 10 pitch set for printing vertically down the page. Compare also the two sets for printing vertically up the page, UP10 and UP12.

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-																
5-																
6-																
7-																
8-																
9-																
A-																
B-																
C-		┌	┐	└	┘	├	┤	┴	┴	┴	┴	┴	┴	┴	┴	┴
D-		─	┌	┐	└	┘	├	┤	┴	┴	┴	┴	┴	┴	┴	┴
E-			┌	┐	─	┌	┐	└	┘	├	┤	┴	┴	┴	┴	┴
F-	:	┌	┐	└	┘	├	┤	┴	┴	┴	┴	┴	┴	┴	┴	┴

This character set consists entirely of graphic characters for drawing lines, boxes and tables. It contains 12 basic characters in three different fonts, including lines, corners, and simple intersections. Note that FM10 has no alphanumeric characters and prints at 10 pitch.

SUGGESTED FCB: This set can be used at 6, 8 or 12 lines per inch; however, it was designed for use at FCB=6.

SUGGESTED USE: Use this set for vertical or horizontal lines, boxes or tables in your output. Since this set uses only one WCGM, it can be used with most other character sets on the same printing job. More information about the use of FM10 is given in the example on the next page.

COMPARE: See the identical versions of this set at the different pitches, FM12 and FM15. Most other character sets (such as TN10 and CU10, for example) include simple box-drawing characters.



r	T	-	r	r	T	-	r	r	T	-	r
t	+	-	t	t	+	-	t	t	+	-	t
l	l	:	l	l	l	:	l	l	l	:	l
L	L	-	L	L	L	-	L	L	L	-	L



MAXIMUM CHARACTERS PER LINE			
FORMS	10 PITCH	12 PITCH	15 PITCH
1181	100	120	150
9511	85	102	127

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-																
5-																
6-																
7-																
8-																
9-																
A-																
B-																
C-		┌	┐	└	┘	├	┤	┴	┴	┬	┬	┴	┴	┬	┬	┬
D-		-	|	┌	┐	└	┘	├	┤	┴	┴	┬	┬	┴	┴	┬
E-			└	┘	-	|	┌	┐	└	┘	├	┤	┴	┴	┬	┬
F-	:	└	┘	└	┘	└	┘	-	|	:	:	:	:	:	:	:

This is the 12 pitch version of the graphics character set. Instead of alphanumeric characters, this set includes line segments, corners, and simple joins for the drawing of lines, boxes, and tables. Note that these graphic characters come in three different fonts.

SUGGESTED FCB: Intended for FCB=8; but FM12 can be used at any of the FCB specifications.

SUGGESTED USE: This set should be used when these graphic characters are needed at 12 pitch. More information about the use of FM12 is given in the example on the next page.

COMPARE: See the other versions of this graphic character set, FM10 and FM15. There are other character sets (such as HY12 and TN12) which have the graphic characters for drawing simple boxes.



	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-																
5-																
6-																
7-																
8-																
9-																
A-																
B-																
C-																
D-																
E-																
F-																

FM15 contains 15 pitch graphic characters in three different fonts. The 12 basic characters include line segments, corners, and simple intersections for the drawing of vertical and horizontal lines, boxes, and tables. FM15 has no alphanumeric characters; in order to print text it must be used in conjunction with another set or sets.

SUGGESTED FCB: Designed for use at 12 lines per inch; however, FM15 can be used at 6 and 8 lines per inch.

SUGGESTED USE: Appropriate when you need to draw lines, boxes, or tables with 15 pitch characters. More information regarding the use of FM15 is given in the example on the next page.

COMPARE: FM10 and FM12 contain the same characters at different pitches. Most other 15 pitch set contain characters for drawing simple boxes.



r	r	$-$	r	r	r	$-$	r	r	r	$-$	r
t	t	$-$	t	t	t	$-$	t	t	t	$-$	t
l	l	$:$	l	l	l	$:$	l	l	l	$:$	l
u	u	$-$	u	u	u	$-$	u	u	u	$-$	u



*INDICATES THE DEFAULT FCB SETTING

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-																
5-																
6-																
7-																
8-																
9-																
A-																
B-																
C-		┌	┐	└	┘	├	┤	┴	┬	┴	┬	┴	┬	┴	┬	┴
D-		—	|	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡
E-			≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡
F-		!	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡

This set contains graphic characters for the drawing of lines, boxes and tables. It has single and double line segments and corners, as well as simple and complex intersections. In this set, all the characters are of the same font, which allows you to mix single and double line graphics.

SUGGESTED FCB: 6 or 8 lines per inch; FCB=6 is recommended.

SUGGESTED USE: This set is useful when more complex lines, boxes, or tables must be drawn at 10 pitch. More information regarding the use of FT10 is given in the example on the next page.

COMPARE: The primary difference between this set and FM10 is that FT10 offers double line graphics and complex joins. The single bar graphics of FT10 will connect with the medium-font graphics of FM10 if necessary.

[illegible]

By specifying CHARS=(CU10,FT10), the above text prints as:

MAXIMUM LINES PER PAGE			
FORMS	FCB = 6	FCB = 8	FCB = 12
1181	45	60*	90
9511	60*	80	120

*indicates the default FCB setting

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-																
5-																
6-																
7-																
8-																
9-																
A-																
B-																
C-		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
D-		-	|	|	|	|	|	|	|	|	|	|	|	|	|	|
E-			|	|	|	|	|	|	|	|	|	|	|	|	|	|
F-		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|

This is a 12 pitch version of the graphic character set containing line segments, corners and intersections as both single and double lines. Each graphic character has a medium font.

SUGGESTED FCB: 6 or 8, but 8 lines per inch is recommended.

SUGGESTED USE: FT12 is appropriate whenever you need vertical and horizontal lines, boxes, or tables drawn at 12 pitch. Note that there are both simple and complex intersections, which allow mixing the single and double line characters. More information about the use of FT12 is given in the example on the next page.

COMPARE: See FT10, which has the same characters at 10 pitch. Note that FT12 has double line graphics and a uniform font, unlike FM12.

GB10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(	+	|
5-	£										!	\$	*)	;	-
6-	-	/									|	,	%	_	>	?
7-	^									\	:	#	@	'	=	"
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≡)	±	▪
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	l	≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ	l	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		\$	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This set allows you to print 10 pitch, boldface characters of Gothic design. Note that it is a complete character set, with upper- and lowercase letters, numbers, and special characters.

SUGGESTED FCB: When using this set it is recommended that you print at 6 lines per inch.

SUGGESTED USE: Use this set whenever you need 10 pitch, boldface Gothic characters for your output.

COMPARE: Note the differences between this set and the other 10 pitch boldface set, BD10. The characters of BD10 are slightly shorter to allow printing at 8 lines per inch. The characters of GB10 are strictly of Gothic design, while those of BD10 have serifs.

CHARS=GB10

FCB=8

It is hard, when one sees a particularly offensive television commercial, to imagine that adult human beings sometime and somewhere sat around a table and decided to construct exactly that commercial and to have it broadcast hundreds of times. But that is what happens. These things are not products of anonymous forces. They are the products of groups of men who have agreed among themselves that this pollution of the consciousness of the people serves their purpose.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 10, p. 273

CHARS=GB10

FCB=6

It is hard, when one sees a particularly offensive television commercial, to imagine that adult human beings sometime and somewhere sat around a table and decided to construct exactly that commercial and to have it broadcast hundreds of times. But that is what happens. These things are not products of anonymous forces. They are the products of groups of men who have agreed among themselves that this pollution of the consciousness of the people serves their purpose.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 10, p. 273

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-   A B C D E F G H I J , < ( + |
1-   & J K L M N O P Q R ! $ % ) ; ~
2-   - / S T U V W X Y Z   , % _ > ?
3-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
4-   A B C D E F G H I J , < ( + |
5-   & J K L M N O P Q R ! $ % ) ; ~
6-   - / S T U V W X Y Z   , % _ > ?
7-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
8-   A B C D E F G H I J , < ( + |
9-   & J K L M N O P Q R ! $ % ) ; ~
A-   - / S T U V W X Y Z   , % _ > ?
B-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
C-   A B C D E F G H I J , < ( + |
D-   & J K L M N O P Q R ! $ % ) ; ~
E-   - / S T U V W X Y Z   , % _ > ?
F-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "

```

GFC is a 15 pitch character set of Gothic design (without serifs). It is condensed, meaning that it has been designed specifically for use at 12 lines per inch. It is also a folded set, so all lower-case input will print as uppercase letters.

SUGGESTED FCB: Designed for use at 12 lines per inch.

SUGGESTED USE: Unlike most sets, GFC will print fully at FCB=12; moreover, its underscore character has been designed to print correctly at 12 lines per inch (see the examples on the back of this page). Use GFC whenever you need such density of lines on the page.

COMPARE: See the IBM set GF15. Also, compare the GFC letters with those of TF15 and note the difference in size.

CHARS=GFC FCB=12

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

CHARS=GFC FCB=8

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This is an IBM folded, uppercase character set. Its letters are of Gothic design. As a folded set, all text printed with this set will appear entirely in uppercase.

SUGGESTED FCB: Use at 6 or 8 lines per inch.

SUGGESTED USE: This set is appropriate if you need text printed in uppercase with Gothic, 10 pitch letters.

COMPARE: See the SCIP uppercase sets BF10, IT10, and TF10 and note the differences in character design.

CHARS=GF10

FCB=8

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

CHARS=GF10

FCB=6

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
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B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This is a 12 pitch character set. It is folded uppercase, which means that all text printed with GF12 will be printed completely in uppercase letters.

SUGGESTED FCB: Can be used at either 6 or 8 lines per inch.

SUGGESTED USE: Use this set for uppercase printing at 12 pitch.

COMPARE: There are two other versions of this IBM set, GF10 and GF15.

PERHAPS THE GREATEST CONTRADICTION IN OUR LIVES, THE HARDEST TO HANDLE, IS THE KNOWLEDGE, "THERE WAS A TIME WHEN I WAS NOT ALIVE, AND THERE WILL COME A TIME WHEN I AM NOT ALIVE." ON THE ONE LEVEL, WHEN YOU "STEP OUT OF YOURSELF" AND SEE YOURSELF AS "JUST ANOTHER HUMAN BEING", IT MAKES COMPLETE SENSE. BUT ON ANOTHER LEVEL, PERHAPS A DEEPER LEVEL, PERSONAL NON-EXISTENCE MAKES NO SENSE AT ALL. ALL THAT WE KNOW IS EMBEDDED INSIDE OUR MINDS, AND FOR ALL THAT TO BE ABSENT FROM THE UNIVERSE IS NOT COMPREHENSIBLE. THIS IS A BASIC UNDENIABLE PROBLEM OF LIFE; PERHAPS THE BEST METAPHORICAL ANALOGUE OF GOEDEL'S THEOREM. WHEN YOU TRY TO IMAGINE YOUR OWN NON-EXISTENCE, YOU HAVE TO TRY TO JUMP OUT OF YOURSELF, BY MAPPING YOURSELF INTO SOMEONE ELSE.... THOUGH YOU MAY IMAGINE THAT YOU HAVE JUMPED OUT OF YOURSELF, YOU CAN NEVER ACTUALLY DO SO -- NO MORE THAN ESCHER'S DRAGON CAN JUMP OUT OF ITS NATIVE TWO-DIMENSIONAL PLANE INTO THREE DIMENSIONS. IN ANY CASE, THIS CONTRADICTION IS SO GREAT THAT MOST OF OUR LIVES WE JUST SWEEP THE WHOLE MESS UNDER THE RUG, BECAUSE TRYING TO DEAL WITH IT JUST LEADS NOWHERE.

D. R. HOFSTADTER, GOEDEL, ESCHER, BACH

NY: BASIC BOOKS, 1979 P. 698

PERHAPS THE GREATEST CONTRADICTION IN OUR LIVES, THE HARDEST TO HANDLE, IS THE KNOWLEDGE, "THERE WAS A TIME WHEN I WAS NOT ALIVE, AND THERE WILL COME A TIME WHEN I AM NOT ALIVE." ON THE ONE LEVEL, WHEN YOU "STEP OUT OF YOURSELF" AND SEE YOURSELF AS "JUST ANOTHER HUMAN BEING", IT MAKES COMPLETE SENSE. BUT ON ANOTHER LEVEL, PERHAPS A DEEPER LEVEL, PERSONAL NON-EXISTENCE MAKES NO SENSE AT ALL. ALL THAT WE KNOW IS EMBEDDED INSIDE OUR MINDS, AND FOR ALL THAT TO BE ABSENT FROM THE UNIVERSE IS NOT COMPREHENSIBLE. THIS IS A BASIC UNDENIABLE PROBLEM OF LIFE; PERHAPS THE BEST METAPHORICAL ANALOGUE OF GOEDEL'S THEOREM. WHEN YOU TRY TO IMAGINE YOUR OWN NON-EXISTENCE, YOU HAVE TO TRY TO JUMP OUT OF YOURSELF, BY MAPPING YOURSELF INTO SOMEONE ELSE.... THOUGH YOU MAY IMAGINE THAT YOU HAVE JUMPED OUT OF YOURSELF, YOU CAN NEVER ACTUALLY DO SO -- NO MORE THAN ESCHER'S DRAGON CAN JUMP OUT OF ITS NATIVE TWO-DIMENSIONAL PLANE INTO THREE DIMENSIONS. IN ANY CASE, THIS CONTRADICTION IS SO GREAT THAT MOST OF OUR LIVES WE JUST SWEEP THE WHOLE MESS UNDER THE RUG, BECAUSE TRYING TO DEAL WITH IT JUST LEADS NOWHERE.

D. R. HOFSTADTER, GOEDEL, ESCHER, BACH

NY: BASIC BOOKS, 1979 P. 698

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-   A B C D E F G H I ¢ . < ( + |
1-   & J K L M N O P Q R ! $ * ) ; ~
2-   - / S T U V W X Y Z   , % _ > ?
3-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
4-   A B C D E F G H I ¢ . < ( + |
5-   & J K L M N O P Q R ! $ * ) ; ~
6-   - / S T U V W X Y Z   , % _ > ?
7-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
8-   A B C D E F G H I ¢ . < ( + |
9-   & J K L M N O P Q R ! $ * ) ; ~
A-   - / S T U V W X Y Z   , % _ > ?
B-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "
C-   A B C D E F G H I ¢ . < ( + |
D-   & J K L M N O P Q R ! $ * ) ; ~
E-   - / S T U V W X Y Z   , % _ > ?
F-   0 1 2 3 4 5 6 7 8 9 : # @ ' = "

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This IBM character set contains Gothic majuscule letters at 15 pitch. It is a folded set, meaning that all minuscule letters in the input text will automatically print as their majuscule equivalents.

SUGGESTED FCB: Printing at 8 lines per inch is recommended.

SUGGESTED USE: Use this set if you need a greater density of material on the page. Do not use this set at 12 lines per inch, since it will look too crowded.

COMPARE: See GFC, the condensed Gothic set designed to print at 12 lines per inch. Also, compare with set with TF15, BF15, and IF15.

CHARS=GF15 FCB=8

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

CHARS=GF15 FCB=6

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

HY12 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(+	
5-	&										!	\$	*)	;	-
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7-	^										`	:	#	@	'	=
8-	a	b	c	d	e	f	g	h	i		{	≤	(+	+	
9-	j	k	l	m	n	o	p	q	r		}	π)	±	■	
A-	-	°	s	t	u	v	w	x	y	z	L	Γ	[≥	•	
B-	0	1	2	3	4	5	6	7	8	9	J	γ]	≠	-	
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		\$	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

HY12 is an upper- and lowercase character set of Gothic design. Its 12 pitch characters are as tall as most characters in 10 pitch sets.

SUGGESTED FCB: Due to the height of the characters, HY12 prints best at 6 lines per inch. At FCB=8 it begins to look crowded and dense.

SUGGESTED USE: The characters of HY12 were designed to allow printing with 12 pitch characters at 6 lines per inch. Hence it is best to use this set when high readability with medium density of text is needed.

COMPARE: HY12 at FCB=6 is more dense than TN10 at the same FCB setting, but it is less dense than LW10 at FCB=6.

Perhaps the greatest contradiction in our lives, the hardest to handle, is the knowledge, "There was a time when I was not alive, and there will come a time when I am not alive." On the one level, when you "step out of yourself" and see yourself as "just another human being", it makes complete sense. But on another level, perhaps a deeper level, personal non-existence makes no sense at all. All that we know is embedded inside our minds, and for all that to be absent from the universe is not comprehensible. This is a basic undeniable problem of life; perhaps the best metaphorical analogue of Goedel's Theorem. When you try to imagine your own non-existence, you have to try to jump out of yourself, by mapping yourself into someone else.... though you may imagine that you have jumped out of yourself, you can never actually do so -- no more than Escher's dragon can jump out of its native two-dimensional plane into three dimensions. In any case, this contradiction is so great that most of our lives we just sweep the whole mess under the rug, because trying to deal with it just leads nowhere.

D. R. Hofstadter, Goedel, Escher, Bach

NY: Basic Books, 1979 p. 698

Perhaps the greatest contradiction in our lives, the hardest to handle, is the knowledge, "There was a time when I was not alive, and there will come a time when I am not alive." On the one level, when you "step out of yourself" and see yourself as "just another human being", it makes complete sense. But on another level, perhaps a deeper level, personal non-existence makes no sense at all. All that we know is embedded inside our minds, and for all that to be absent from the universe is not comprehensible. This is a basic undeniable problem of life; perhaps the best metaphorical analogue of Goedel's Theorem. When you try to imagine your own non-existence, you have to try to jump out of yourself, by mapping yourself into someone else.... though you may imagine that you have jumped out of yourself, you can never actually do so -- no more than Escher's dragon can jump out of its native two-dimensional plane into three dimensions. In any case, this contradiction is so great that most of our lives we just sweep the whole mess under the rug, because trying to deal with it just leads nowhere.

D. R. Hofstadter, Goedel, Escher, Bach

NY: Basic Books, 1979 p. 698

IF10 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

IF10 is a folded, uppercase set, utilizing the characters in the first WCGM of IT10. All output printed with this character set will appear entirely in uppercase.

SUGGESTED FCB: Can be use at either FCB=6 or FCB=8.

SUGGESTED USE: Suitable when the output must appear in italic uppercase.

COMPARE: The characters for this set have been taken from IT10. The IT10 characters are also used in ML10 and MT10. If you wish to use IF10 together with another set, compare the font of the other set to the font of IF10, which is "light" or thin.

CHARS=IF10

FCB=8

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

CHARS=IF10

FCB=6

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
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1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
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3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
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6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
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B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This is a 12 pitch, uppercase set, consisting of italic characters. It is folded uppercase, meaning that all letters entered in lowercase will print as their uppercase equivalents.

SUGGESTED FCB: 6 or 8 lines per inch is recommended.

SUGGESTED USE: Useful when text printed entirely in italic uppercase at 12 pitch is needed.

COMPARE: See IT12, whose first WCGM constitutes IF12. Further, these characters are also used in MH12 and MT12. Note should be taken of the font of this character set if you are considering using it with another set for the same printing job.

CHARS=IF12 FCB=8

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

CHARS=IF12 FCB=6

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

IF12 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This is a 12 pitch, uppercase set, consisting of italic characters. It is folded uppercase, meaning that all letters entered in lower-case will print as their uppercase equivalents.

SUGGESTED FCB: 6 or 8 lines per inch is recommended.

SUGGESTED USE: Useful when text printed entirely in italic uppercase at 12 pitch is needed.

COMPARE: See IT12, whose first WCGM constitutes IF12. Further, these characters are also used in MH12 and MT12. Note should be taken of the font of this character set if you are considering using it with another set for the same printing job.

CHARS=IF12 FCB=8

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

CHARS=IF12 FCB=6

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-  A B C D E F G H I 0 . < ( + |
1-  G J K L M N O P Q R ! $ * ) ; ~
2-  - / S T U V W X Y Z , % _ > ?
3-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
4-  A B C D E F G H I 0 . < ( + |
5-  G J K L M N O P Q R ! $ * ) ; ~
6-  - / S T U V W X Y Z , % _ > ?
7-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
8-  A B C D E F G H I 0 . < ( + |
9-  G J K L M N O P Q R ! $ * ) ; ~
A-  - / S T U V W X Y Z , % _ > ?
B-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "
C-  A B C D E F G H I 0 . < ( + |
D-  G J K L M N O P Q R ! $ * ) ; ~
E-  - / S T U V W X Y Z , % _ > ?
F-  0 1 2 3 4 5 6 7 8 9 : # @ ' = "

```

This 15 pitch set contains italic majuscule characters as its alphabetic component. It is a folded uppercase set, hence all minuscule letters will automatically be printed in majuscule. This set employs the characters from the first WCGM of IT15.

SUGGESTED FCB: Best are the settings FCB=6 or FCB=8. At 12 lines per inch the superscript characters will not print fully.

SUGGESTED USE: Appropriate when italic majuscule characters are needed at 15 pitch.

COMPARE: See IT15, from which these characters have been drawn. The IT15 characters are also used in the set MT15. Compare the characters of this set with its 10 and 12 pitch versions, noting the changes in the character design as the pitch changes.

CHARS=IF15 FCB=B

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

CHARS=IF15 FCB=6

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

IT10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(	+	|
5-	£										!	\$	*)	;	-
6-	-	/									|	,	%	_	>	?
7-	^										`	:	#	@	'	=
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≡)	±	▪
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	[≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ]	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		§	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This set consists of 10 pitch italic characters. The letters are serified and have a "light" or thin font.

SUGGESTED FCB: Can be used at either 6 or 8 lines per inch; however, FCB=6 is recommended.

SUGGESTED USES: To be used whenever italic typeface of a thin font at 10 pitch is needed.

COMPARE: The IT10 characters are used in ML10 and MT10. IF10 is the folded uppercase version of IT10. Also, contrast the fonts of IT10 with the bolder ones of BD10 and CU10.

CHARS=IT10

FCB=8

The most famous is Russell's paradox. Most sets, it would seem, are not members of themselves -- for example, the set of walruses is not a walrus, the set containing only Joan of Arc is not Joan of Arc (a set is not a person) -- and so on. In this respect, most sets are rather "run-of-the-mill". However, some "self-swallowing" sets do contain themselves as members, such as the set of all sets, or the set of all things except Joan of Arc, and so on. Clearly, every set is either run-of-the-mill or self-swallowing, and no set can be both. Now nothing prevents us from inventing R: the set of all run-of-the-mill sets. At first, R might seem a rather run-of-the-mill invention--but that opinion must be revised when you ask yourself, "Is R itself a run-of-the-mill set or a self-swallowing set?" You will find that the answer is: "R is neither run-of-the-mill nor self-swallowing, for either choice leads to paradox." Try it!

D. R. Hofstadter, Goedel, Escher, Bach, NY: Basic Books, 1979 p. 20

CHARS=IT10

FCB=6

The most famous is Russell's paradox. Most sets, it would seem, are not members of themselves -- for example, the set of walruses is not a walrus, the set containing only Joan of Arc is not Joan of Arc (a set is not a person) -- and so on. In this respect, most sets are rather "run-of-the-mill". However, some "self-swallowing" sets do contain themselves as members, such as the set of all sets, or the set of all things except Joan of Arc, and so on. Clearly, every set is either run-of-the-mill or self-swallowing, and no set can be both. Now nothing prevents us from inventing R: the set of all run-of-the-mill sets. At first, R might seem a rather run-of-the-mill invention--but that opinion must be revised when you ask yourself, "Is R itself a run-of-the-mill set or a self-swallowing set?" You will find that the answer is: "R is neither run-of-the-mill nor self-swallowing, for either choice leads to paradox." Try it!

D. R. Hofstadter, Goedel, Escher, Bach, NY: Basic Books, 1979 p. 20

IT12 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-												¢	.	<	(+
5-	£											!	\$	*)	;
6-	-	/										|	,	%	_	>
7-	^											`	:	#	@	'
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	□)	±	■
A-	°	s	t	u	v	w	x	y	z			L	Γ	[≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ]	≠	-
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R					§	¶
E-	\	S	T	U	V	W	X	Y	Z							
F-	0	1	2	3	4	5	6	7	8	9						

This is a 12 pitch italic character set. It contains uppercase and lowercase letters, designed with serifs and a thin font.

SUGGESTED FCB: Designed for use at 8 lines per inch.

SUGGESTED USE: To be used when 12 pitch italic characters are required.

COMPARE: The multiple sets MH12 and MT12 also utilize the characters of IT12. There is a folded uppercase version of this set, IF12.

Perhaps the greatest contradiction in our lives, the hardest to handle, is the knowledge, "There was a time when I was not alive, and there will come a time when I am not alive." On the one level, when you "step out of yourself" and see yourself as "just another human being", it makes complete sense. But on another level, perhaps a deeper level, personal non-existence makes no sense at all. All that we know is embedded inside our minds, and for all that to be absent from the universe is not comprehensible. This is a basic undeniable problem of life; perhaps the best metaphorical analogue of Goedel's Theorem. When you try to imagine your own non-existence, you have to try to jump out of yourself, by mapping yourself into someone else.... though you may imagine that you have jumped out of yourself, you can never actually do so -- no more than Escher's dragon can jump out of its native two-dimensional plane into three dimensions. In any case, this contradiction is so great that most of our lives we just sweep the whole mess under the rug, because trying to deal with it just leads nowhere.

D. R. Hofstadter, Goedel, Escher, Bach

NY: Basic Books, 1979 p. 698

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D. R. Hofstadter, Goedel, Escher, Bach

NY: Basic Books, 1979 p. 698

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-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-
1-
2-
3-
4-          ¢ . < ( + |
5-  £          ! $ % ) ; ~
6-  - /          | , % _ > ?
7-  ^          ` : # @ ' = "
8-  a b c d e f g h i  { ≤ ( + +
9-  j k l m n o p q r  } ¨ ) ± ■
A-  ° s t u v w x y z  L r l ≥ •
B-  0 1 2 3 4 5 6 7 8 9  J j I ≠ -
C-  { A B C D E F G H I
D-  } J K L M N O P Q R  § ¤
E-  \  S T U V W X Y Z
F-  0 1 2 3 4 5 6 7 8 9

```

IT15 is an italic character set at 15 pitch.

SUGGESTED FCB: Best when printed at 8 lines per inch. If the FCB is set at 12 the superscript characters will not print completely.

SUGGESTED USE: Use whenever italic typeface at 15 pitch is needed.

COMPARE: See the folded uppercase version of this set, IF15, as well as MT15, which contains the characters of IT15.

Wherever computer centers have become established, that is to say, in countless places in the United States, as well as in virtually all other industrial regions of the world, bright young men of disheveled appearance, often with sunken glowing eyes, can be seen sitting at computer consoles, their arms tensed and waiting to fire their fingers, already poised to strike, at the buttons and keys on which their attention seems to be as riveted as a gambler's on the rolling dice. When not so transfixed, they often sit at tables strewn with computer printouts over which they pore like possessed students of a cabalistic text. They work until they nearly drop, twenty, thirty hours at a time. Their food, if they arrange it, is brought to them: coffee, Cokes, sandwiches. If possible, they sleep on cots near the computer. But only for a few hours -- then back to the console or the printouts. Their rumpled clothes, their unwashed and unshaven faces, and their uncombed hair all testify that they are oblivious to their bodies and to the world in which they move. They exist, at least when so engaged, only through and for the computers. These are the computer bums, compulsive programmers. They are an international phenomenon.

Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

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Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

LW10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(	+	|
5-	£										!	\$	*)	;	~
6-	-	/									|	,	%	_	>	?
7-	^									`	:	#	@	'	=	"
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
9-		j	k	l	m	n	o	p	q	r		}	≡)	±	■
A-	°	s	t	u	v	w	x	y	z		L	Γ	l	≥	•	
B-	0	1	2	3	4	5	6	7	8	9	J	γ]	≠	-	
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		\$	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This is a 10 pitch, upper- and lowercase character set. The height of most of the characters has been reduced slightly so as to allow 10 pitch printing at two different FCB settings. The size of the serifs has been reduced in order to give it a less cluttered or busy appearance.

SUGGESTED FCB: This set can be used at either 6 or 8 lines per inch; however, LW10 was designed for printing at FCB=8.

SUGGESTED USE: LW10 should be used when 10 pitch printing at 8 lines per inch is required. At FCB=8 it is more readable than TN10 at the same FCB setting.

COMPARE: The size of the LW10 characters should be compared with the taller characters of TN10 and CU10, and with those of BD10, whose characters are of the same height. LW10 is contained in the multiple set ML10.

CHARS=LW10

FCB=8

It is hard, when one sees a particularly offensive television commercial, to imagine that adult human beings sometime and somewhere sat around a table and decided to construct exactly that commercial and to have it broadcast hundreds of times. But that is what happens. These things are not products of anonymous forces. They are the products of groups of men who have agreed among themselves that this pollution of the consciousness of the people serves their purpose.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 10, p. 273

CHARS=LW10

FCB=6

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 10, p. 273


```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-
1-
2-
3-
4-                € . < ( + |
5-    &                ! $ % ) ; ~
6-    - /                | , % _ > ?
7-    ^                ` : # @ ' = "
8-    a b c d e f g h i    { ≤ ( + †
9-    j k l m n o p q r    } π ) ± ■
A-    ° s t u v w x y z    L r [ ≥ •
B-    0 1 2 3 4 5 6 7 8 9    J 7 ] ≠ -
C-    { A B C D E F G H I
D-    } J K L M N O P Q R    § ¶
E-    \    S T U V W X Y Z
F-    0 1 2 3 4 5 6 7 8 9

```

This is a 12 pitch, upper- and lowercase character set. The height of the characters has been reduced slightly so as to make output more readable when printed at 8 lines per inch. Note that only a few characters have serifs, giving this set a Gothic appearance.

SUGGESTED FCB: This set can be used at either 6 or 8 lines per inch; however, LW12 was designed for printing at FCB=8.

SUGGESTED USE: LW12 should be used when 12 pitch printing at 8 lines per inch is required. At FCB=8 it can be an alternative to TN12 or TN15.

COMPARE: The size of the LW12 characters should be compared with the taller characters of HY12, TN12, and CU12. Compare LW12 with the 10 pitch version, LW10.

The technologist argues again and again that views such as those expressed here are anti-technological, anti-scientific, and finally anti-intellectual. He will try to construe all arguments against his megalomaniacal visions as being arguments for the abandonment of reason, rationality, science, and technology, and in favor of pure intuition, feeling, drug-induced mindlessness, and so on. In fact, I am arguing for rationality. But I argue that rationality may not be separated from intuition and feeling. I argue for the rational use of science and technology, not for its mystification, let alone its abandonment. I urge the introduction of ethical thought into science planning. I combat the imperialism of instrumental reason, not reason.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 9, pp. 255-256

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	ƒ	α	β	γ	δ		ζ	η	θ	ι	Δ	Γ	Λ	Π	Σ	Υ
1-	Ј	ε	κ	λ	μ	ν		π	ξ	ρ	Ξ	Θ	Φ	Ψ	Ε	Ω
2-	ℓ	ο	σ	τ	υ	φ	χ		ψ	ω	α	β	μ	ν	σ	ρ
3-	i	j	k	l	m	n	t	/	Π	*	α	β	μ	ν	σ	ρ
4-		a	b	c	d	e	f	g	h	i	^	.	<	(	+	|
5-	&	j	k	l	m	n	o	p	q	r	!	\$	*)	;	~
6-	-	/	s	t	u	v	w	x	y	z	|	,	%	_	>	?
7-	o	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-	+	a	b	c	d	e	f	g	h	i	î	{	≤	(+	}
9-	-	j	k	l	m	n	o	p	q	r	ĵ	}	()	±	,
A-	-	̄	s	t	u	v	w	x	y	z	ĥ	ℓ	Γ	ℓ	≥	•
B-	o	1	2	3	4	5	6	7	8	9	ĥ	Ј	γ]	≠	-
C-	{	A	B	C	D	E	F	G	H	I	ƒ	≡	≈	α	∇	ℓ
D-	}	J	K	L	M	N	O	P	Q	R	/	∫	⊥	∞	,	=
E-	\	||	S	T	U	V	W	X	Y	Z	Ј	φ	h	½	→	←
F-	0	1	2	3	4	5	6	7	8	9	Σ	√	λ	Å	≠	ð

This 12 pitch character set is designed for the printing of mathematical expressions, symbols, and equations. It contains the tall Gothic letters of HY12, Greek letters, sub- and superscripts, as well as other special characters pertinent to mathematical notation.

SUGGESTED FCB: Use this set only at 6 lines per inch.

SUGGESTED USE: MA12 will allow you to include mathematical formulae in your text. To use the special characters, a translation is necessary. There is a program available, called MATHFORM, which will automatically format text for this set. If you have a text formatting application, speak with the SCRIPT consultant for assistance.

The following equations were printed using the MA12 character set, utilizing SCRIPT and the MATHFORM program to format the equations. For assistance in using MA12 for mathematical output, speak with the SCRIPT consultant.

CHARS=MA12 FCB=6

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad (1)$$

$$\int_0^{\pi} \frac{x^2}{(\sin x)^3} dx \quad (2)$$

$$\sum_{i=1}^n (-1)^{i+1} \frac{3 \cdot 6 \cdots 3i}{1 \cdot 4 \cdots (3i-2)} \cdot \frac{1}{i^2} \quad (3)$$

$$1 + \int_a^b F(x) dx \quad (4)$$

$$\int_0^{\infty} \frac{\cos(ux) \cos\left(\frac{\pi}{2}u\right)}{1-u^2} du = \begin{cases} -\cos(x) & \text{if } |x| \leq \frac{\pi}{2} \\ 0 & \text{if } |x| > \frac{\pi}{2} \end{cases} \quad (5)$$

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	?	A	B	C	D	E	F	G	H	I	a	b	c	d	e	f
1-	!	J	K	L	M	N	|	P	Q	R	g	h	i	j	k	l
2-	8	9	S	T	U	V	W	X	Y	Z	m	n	o	p	q	r
3-	0	1	2	3	4	5	6	7	s	t	u	v	w	x	y	z
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z	0	,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-	&	a	b	c	d	e	f	g	h	i	a	{	£	\$	+	©
9-	!	j	k	l	m	n	o	p	q	r	b	}	&	¢	±	■
A-	a	°	s	t	u	v	w	x	y	z	c	L	r	[¿	•
B-	0	1	2	3	4	5	6	7	8	9	d	J	γ]	≠	—
C-	\$	A	B	C	D	E	F	G	H	I	e	f	\$	g	h	i
D-	¢	J	K	L	M	N	O	P	Q	R	j	k	l	m	n	o
E-	\	?	S	T	U	V	W	X	Y	Z	p	q	r	s	t	u
F-	0	1	2	3	4	5	6	7	8	9	v	w	x	y	z	

This multiple character set is a combination of HY12, IT12, and BD12. It offers Gothic, italic and boldface characters at 12 pitch. In this set, the characters of HY12 are in the standard hexadecimal locations; hence the bold and italic require a special translation. You should examine the table closely to see which special characters (e.g., punctuation) are available in the different fonts.

SUGGESTED FCB: Since this set employs the tall HY12 characters, MH12 prints best at 6 lines per inch.

SUGGESTED USE: MH12 makes it possible to print with three different typefonts at 12 pitch. The translations necessary to use the bold and italic characters can be made by SPIRES, by SCRIPT formats, or by means of an EXEC file. Go to 3800 consulting for assistance when using this set.

COMPARE: The set MT12 also contains three typestyles of 12 pitch characters. Also compare MH12 with ML10, the latter using the shorter LW10 characters instead of the taller ones of HY12.

The technologist argues again and again that views such as those expressed here are anti-technological, anti-scientific, and finally anti-intellectual. He will try to construe all arguments against his megalomaniac visions as being arguments for the abandonment of reason, rationality, science, and technology, and in favor of pure intuition, feeling, drug-induced mindlessness, and so on. In fact, I *am* arguing for rationality. But I argue that rationality may not be separated from intuition and feeling. I argue for the rational use of science and technology, not for its mystification, let alone its abandonment. I urge the introduction of ethical thought into science planning. I combat the imperialism of instrumental reason, not reason.

Joseph Weizenbaum, *Computer Power and Human Reason*,

Chapter 9, pp. 255-256

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Chapter 9, pp. 255-256

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	?	A	B	C	D	E	F	G	H	I	a	b	c	d	e	f
1-	!	J	K	L	M	N		P	Q	R	g	h	i	j	k	l
2-	8	9	S	T	U	V	W	X	Y	Z	m	n	o	p	q	r
3-	0	1	2	3	4	5	6	7	s	t	u	v	w	x	y	z
4-		A	B	C	D	E	F	G	H	I	†	.	<	(	+	|
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z	O	,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-	&	a	b	c	d	e	f	g	h	i	a	{	≤	\$	+	⊙
9-	!	j	k	l	m	n	o	p	q	r	b	}	£	¢	±	▪
A-	@	°	s	t	u	v	w	x	y	z	c	L	r	l	≥	•
B-	0	1	2	3	4	5	6	7	8	9	d	J	γ	l	≠	-
C-	\$	A	B	C	D	E	F	G	H	I	e	f	S	g	h	i
D-	¢	J	K	L	M	N	O	P	Q	R	j	k	l	m	n	o
E-	\	?	S	T	U	V	W	X	Y	Z	p	q	r	s	t	u
F-	0	1	2	3	4	5	6	7	8	9	v	w	x	y	z	

This 10 pitch, upper- and lowercase character set contains characters from LW10, BD10, and IT10. You can therefore print Roman, italic, and boldface characters with a single character set. The Roman characters of LW10 are in the standard hexadecimal position; accordingly a translation must be made whenever you wish to use the italic and boldface characters. You should examine the table closely to determine which special characters are available in the different type styles. Most of the special characters of LW10 are available; however, not all of these characters are available in all three typestyles.

SUGGESTED FCB: Use at either 6 or 8 lines per inch. The shorter characters of this set allow 10 pitch printing at 8 lines per inch with good results.

SUGGESTED USE: This set makes it possible to print with three different typefonts. The necessary translations for the bold and italic characters can be done either by SCRIPT, by SPIRES formats, or by an EXEC file. Speak with the 3800 consultant for assistance when using this set.

COMPARE: See MT10, which uses the TN10 characters instead of the LW10 characters.

The most famous is Russell's paradox. Most sets, it would seem, are not members of themselves -- for example, the set of walruses is not a walrus, the set containing only Joan of Arc is not Joan of Arc (a set is not a person) -- and so on. In this respect, most sets are rather "run-of-the-mill". However, some "self-swallowing" sets *do* contain themselves as members, such as the set of all sets, or the set of all things except Joan of Arc, and so on. Clearly, every set is either run-of-the-mill or self-swallowing, and no set can be both. Now nothing prevents us from inventing R: *the set of all run-of-the-mill sets*. At first, R might seem a rather run-of-the-mill invention--but that opinion must be revised when you ask yourself, "Is R itself a run-of-the-mill set or a self-swallowing set?" You will find that the answer is: "R is neither run-of-the-mill nor self-swallowing, for either choice leads to paradox." Try it!

D. R. Hofstadter, *Goedel, Escher, Bach*, NY: Basic Books, 1979 p. 20

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MT10 / 4 WCGMs

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	?	A	B	C	D	E	F	G	H	I	a	b	c	d	e	f
1-	!	J	K	L	M	N		P	Q	R	g	h	i	j	k	l
2-	8	9	S	T	U	V	W	X	Y	Z	m	n	o	p	q	r
3-	0	1	2	3	4	5	6	7	s	t	u	v	w	x	y	z
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z	O	,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-	£	a	b	c	d	e	f	g	h	i	a	{	≤	\$	+	@
9-	!	j	k	l	m	n	o	p	q	r	b	}	£	¢	±	▪
A-	ª	º	s	t	u	v	w	x	y	z	c	L	Γ	[≥	•
B-	0	1	2	3	4	5	6	7	8	9	d	┘	┘]	≠	—
C-	\$	A	B	C	D	E	F	G	H	I	e	f	S	g	h	i
D-	¢	J	K	L	M	N	O	P	Q	R	j	k	l	m	n	o
E-	\	?	S	T	U	V	W	X	Y	Z	p	q	r	s	t	u
F-	0	1	2	3	4	5	6	7	8	9	v	w	x	y	z	

This set consists of characters from TN10, BD10, and IT10. By specifying this single set, it is possible to print with three different typefonts: Roman, italic, and boldface. The set includes all the majuscule and minuscule letters of all three sets; however, not all of the special characters are available in each font. You should examine the table closely to determine which special characters are available in the different typestyles.

SUGGESTED FCB: Can be used at 6 or 8; recommended is FCB=6.

SUGGESTED USE: To be used whenever these three fonts at 10 pitch are required. Special translations must be made to print the bold and italic characters; to do this, you can use either SCRIPT, SPIRES formats, or an EXEC file. For assistance, speak with the 3800 consultant.

COMPARE: Contrast MT10 with ML10: the latter utilizes the shorter Roman letters of LW10 and is intended for use at 8, not 6, lines per inch. Like MT10, MH12 prints best at 6 lines per inch, except of course that MH12 contains 12 instead of 10 pitch characters.

The most famous is Russell's paradox. Most sets, it would seem, are not members of themselves -- for example, the set of walruses is not a walrus, the set containing only Joan of Arc is not Joan of Arc (a set is not a person) -- and so on. In this respect, most sets are rather "run-of-the-mill". However, some "self-swallowing" sets *do* contain themselves as members, such as the set of all sets, or the set of all things except Joan of Arc, and so on. Clearly, every set is either run-of-the-mill or self-swallowing, and no set can be both. Now nothing prevents us from inventing R: *the set of all run-of-the-mill sets*. At first, R might seem a rather run-of-the-mill invention--but that opinion must be revised when you ask yourself, "Is R itself a run-of-the-mill set or a self-swallowing set?" You will find that the answer is: "R is neither run-of-the-mill nor self-swallowing, for either choice leads to paradox." Try it!

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	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-	?	A	B	C	D	E	F	G	H	I	a	b	c	d	e	f
1-	!	J	K	L	M	N		P	Q	R	g	h	i	j	k	l
2-	8	9	S	T	U	V	W	X	Y	Z	m	n	o	p	q	r
3-	0	1	2	3	4	5	6	7	s	t	u	v	w	x	y	z
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z	0	,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-	£	a	b	c	d	e	f	g	h	i	a	{	≤	\$	+	©
9-	!	j	k	l	m	n	o	p	q	r	b	}	£	¢	±	■
A-	a	°	s	t	u	v	w	x	y	z	c	L	r	l	≥	•
B-	0	1	2	3	4	5	6	7	8	9	d	J	l	l	≠	-
C-	\$	A	B	C	D	E	F	G	H	I	e	f	§	g	h	i
D-	¢	J	K	L	M	N	O	P	Q	R	j	k	l	m	n	o
E-	\	?	S	T	U	V	W	X	Y	Z	p	q	r	s	t	u
F-	0	1	2	3	4	5	6	7	8	9	v	w	x	y	z	

This set contains 12 pitch characters from TN12, IT12, and BD12. This allows printing in Gothic, italic and bold typestyles with a single character set. Note that the characters of TN12 are in the standard hexadecimal positions; therefore special translations must be made in order to print the italic and boldface characters. A close examination of the table should be made in order to determine which special characters (e.g., punctuation marks) are available in the various fonts.

SUGGESTED FCB: 6 or 8 lines per inch.

SUGGESTED USE: MT12 is appropriate when these three typestyles at 12 pitch are required for the same printing job. To print the bold and italic characters, you can use either SCRIPT, SPIRES formats, or an EXEC file. Speak with the 3800 consultant for assistance when using this set.

COMPARE: The important difference between this set and MH12 is that the latter employs the tall Gothic characters of HY12 and hence is better suited for printing at 6 lines per inch.

The technologist argues again and again that views such as those expressed here are anti-technological, anti-scientific, and finally anti-intellectual. He will try to construe all arguments against his megalomaniac visions as being arguments for the abandonment of reason, rationality, science, and technology, and in favor of pure intuition, feeling, drug-induced mindlessness, and so on. In fact, I *am* arguing for rationality. But I argue that rationality may not be separated from intuition and feeling. I argue for the rational use of science and technology, not for its mystification, let alone its abandonment. I urge the introduction of ethical thought into science planning. I combat the imperialism of instrumental reason, not reason.

Joseph Weizenbaum, *Computer Power and Human Reason*,

Chapter 9, pp. 255-256

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Joseph Weizenbaum, *Computer Power and Human Reason*,

Chapter 9, pp. 255-256

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-  ?  A  B  C  D  E  F  G  H  I  a  b  c  d  e  f
1-  !  J  K  L  M  N  |  P  Q  R  s  h  i  j  k  l
2-  8  9  S  T  U  V  W  X  Y  Z  m  n  o  p  q  r
3-  0  1  2  3  4  5  6  7  s  t  u  v  w  x  y  z
4-      A  B  C  D  E  F  G  H  I  ¢  .  <  (  +  |
5-  ¢  J  K  L  M  N  O  P  Q  R  !  $  *  )  ;  ~
6-  -  /  S  T  U  V  W  X  Y  Z  0  ,  %  _  >  ?
7-  0  1  2  3  4  5  6  7  8  9  :  #  @  '  =  "
8-  ¢  a  b  c  d  e  f  g  h  i  a  {  ≤  $  +  @
9-  !  j  k  l  m  n  o  p  q  r  b  }  ¢  ¢  ±  ■
A-  @  °  s  t  u  v  w  x  y  z  ¢  L  r  l  ≥  •
B-  0  1  2  3  4  5  6  7  8  9  d  J  l  j  ≠  -
C-  $  A  B  C  D  E  F  G  H  I  e  f  s  g  h  i
D-  ¢  J  K  L  M  N  O  P  Q  R  j  k  l  m  n  o
E-  \  ?  S  T  U  V  W  X  Y  Z  p  q  r  s  t  u
F-  0  1  2  3  4  5  6  7  8  9  v  w  x  y  z

```

MT15 is the combination of TN15, IT15, and BD15. By specifying this set in the CHARS statement, printing with Gothic, italic, and bold fonts is possible. As with the other multiple sets, in MT15 the italic and bold characters are not in the usual hexadecimal locations; hence a special translation must be made in order to print them.

SUGGESTED FCB: Can be used at 8 or 12 lines per inch; however, FCB=8 is recommended, since at 12 lines per inch the superscripted characters will not print completely.

SUGGESTED USE: Useful when these three fonts at 15 pitch are needed. For assistance in making the necessary translations for the italic and bold characters, speak with either the SCRIPT or the 3800 consultant.

COMPARE: This set is the only one offering three different fonts at 15 pitch. Refer to MT12, which also is intended for use at 8 lines per inch.

Wherever computer centers have become established, that is to say, in countless places in the United States, as well as in virtually all other industrial regions of the world, bright young men of disheveled appearance, often with sunken glowing eyes, can be seen sitting at computer consoles, their arms tensed and waiting to fire their fingers, already poised to strike, at the buttons and keys on which their attention seems to be as riveted as a gambler's on the rolling dice. When not so transfixed, they often sit at tables strewn with computer printouts over which they pore like possessed students of a cabalistic text. They work until they nearly drop, twenty, thirty hours at a time. Their food, if they arrange it, is brought to them: coffee, Cokes, sandwiches. If possible, they sleep on cots near the computer. But only for a few hours -- then back to the console or the printouts. Their rumpled clothes, their unwashed and unshaven faces, and their uncombed hair all testify that they are oblivious to their bodies and to the world in which they move. They exist, at least when so engaged, only through and for the computers. These are the computer bums, compulsive programmers. They are an international phenomenon.

Joseph Weizenbaum, *Computer Power and Human Reason*,
Chapter 4. p. 116

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	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(+	
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This 10 pitch set is folded uppercase, using characters from the first WCGM of TN10. All minuscule letters in the input text will print as their majuscule equivalents.

SUGGESTED FCB: Can be used at either 6 or 8 lines per inch.

SUGGESTED USE: Designed for use when output entirely in uppercase is needed.

COMPARE: See TN10, from which these characters were taken. The set MT10 also uses the TN10 characters.

CHARS=TF10

FCB=8

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

CHARS=TF10

FCB=6

THE COMPUTER PROGRAMMER, HOWEVER, IS A CREATOR OF UNIVERSES FOR WHICH HE ALONE IS THE LAWGIVER. SO, OF COURSE, IS THE DESIGNER OF ANY GAME. BUT UNIVERSES OF VIRTUALLY UNLIMITED COMPLEXITY CAN BE CREATED IN THE FORM OF COMPUTER PROGRAMS. MOREOVER, AND THIS IS THE CRUCIAL POINT, SYSTEMS SO FORMULATED AND ELABORATED ACT OUT THEIR PROGRAMMED SCRIPTS. THEY COMPLIANTLY OBEY THEIR LAWS AND VIVIDLY EXHIBIT THEIR OBEDIENT BEHAVIOR. NO PLAYWRIGHT, NO DIRECTOR, NO EMPEROR, HOWEVER POWERFUL, HAS EVER EXERCISED SUCH ABSOLUTE AUTHORITY TO ARRANGE A STAGE OR A FIELD OF BATTLE AND TO COMMAND SUCH UNSWERVINGLY DUTIFUL ACTORS OR TROOPS.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, P. 115

TF12 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	⋄	.	<	(	+	|
1-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	⋄	.	<	(	+	|
5-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	⋄	.	<	(	+	|
9-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	⋄	.	<	(	+	|
D-	£	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	~
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

TF12 is an uppercase, 12 pitch character set. It is folded, meaning that all letters entered in lowercase will print in uppercase. This set uses characters from the first WCGM of TN12.

SUGGESTED FCB: Use at either 6 or 8 lines per inch.

SUGGESTED USE: TF12 would be best when text entirely in uppercase is required.

COMPARE: TN12 is the character set from which the characters for TF12 have been taken. Another set which uses the TN12 letters is MT12. Compare the design of the letters of this set to its 10 and 15 pitch versions.

CHARS=TF12 FCB=8

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

CHARS=TF12 FCB=6

THE TECHNOLOGIST ARGUES AGAIN AND AGAIN THAT VIEWS SUCH AS THOSE EXPRESSED HERE ARE ANTI-TECHNOLOGICAL, ANTI-SCIENTIFIC, AND FINALLY ANTI-INTELLECTUAL. HE WILL TRY TO CONSTRUE ALL ARGUMENTS AGAINST HIS MEGALOMANIC VISIONS AS BEING ARGUMENTS FOR THE ABANDONMENT OF REASON, RATIONALITY, SCIENCE, AND TECHNOLOGY, AND IN FAVOR OF PURE INTUITION, FEELING, DRUG-INDUCED MINDLESSNESS, AND SO ON. IN FACT, I AM ARGUING FOR RATIONALITY. BUT I ARGUE THAT RATIONALITY MAY NOT BE SEPARATED FROM INTUITION AND FEELING. I ARGUE FOR THE RATIONAL USE OF SCIENCE AND TECHNOLOGY, NOT FOR ITS MYSTIFICATION, LET ALONE ITS ABANDONMENT. I URGE THE INTRODUCTION OF ETHICAL THOUGHT INTO SCIENCE PLANNING. I COMBAT THE IMPERIALISM OF INSTRUMENTAL REASON, NOT REASON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON,

CHAPTER 9, PP. 255-256

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
1-		£	J	K	L	M	N	O	P	Q	R	!	\$	*)	~
2-		-	/	S	T	U	V	W	X	Y	Z		,	%	_	> ?
3-		0	1	2	3	4	5	6	7	8	9	:	#	@	'	= "
4-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
5-		£	J	K	L	M	N	O	P	Q	R	!	\$	*)	~
6-		-	/	S	T	U	V	W	X	Y	Z		,	%	_	> ?
7-		0	1	2	3	4	5	6	7	8	9	:	#	@	'	= "
8-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
9-		£	J	K	L	M	N	O	P	Q	R	!	\$	*)	~
A-		-	/	S	T	U	V	W	X	Y	Z		,	%	_	> ?
B-		0	1	2	3	4	5	6	7	8	9	:	#	@	'	= "
C-		A	B	C	D	E	F	G	H	I	¢	.	<	(	+	|
D-		£	J	K	L	M	N	O	P	Q	R	!	\$	*)	~
E-		-	/	S	T	U	V	W	X	Y	Z		,	%	_	> ?
F-		0	1	2	3	4	5	6	7	8	9	:	#	@	'	= "

This is the 15 pitch version of the uppercase sets which use characters from the TN sets. TF15 employs characters from the first WCGM of TN15. Like TF10 and TF12, this is a folded set, so all printing jobs referencing TF15 will print completely in uppercase.

SUGGESTED FCB: Best at 6 or 8; the superscript characters will not print fully at 12 lines per inch.

SUGGESTED USE: Best when the text must appear entirely in uppercase and the maximum number of characters per line is needed.

COMPARE: See TN15, which is the source of the characters of TF15. These characters are also used in the multiple set MT15.

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

WHEREVER COMPUTER CENTERS HAVE BECOME ESTABLISHED, THAT IS TO SAY, IN COUNTLESS PLACES IN THE UNITED STATES, AS WELL AS IN VIRTUALLY ALL OTHER INDUSTRIAL REGIONS OF THE WORLD, BRIGHT YOUNG MEN OF DISHEVELED APPEARANCE, OFTEN WITH SUNKEN GLOWING EYES, CAN BE SEEN SITTING AT COMPUTER CONSOLES, THEIR ARMS TENSED AND WAITING TO FIRE THEIR FINGERS, ALREADY POISED TO STRIKE, AT THE BUTTONS AND KEYS ON WHICH THEIR ATTENTION SEEMS TO BE AS RIVETED AS A GAMBLER'S ON THE ROLLING DICE. WHEN NOT SO TRANSFIXED, THEY OFTEN SIT AT TABLES STREWN WITH COMPUTER PRINTOUTS OVER WHICH THEY PORE LIKE POSSESSED STUDENTS OF A CABALISTIC TEXT. THEY WORK UNTIL THEY NEARLY DROP, TWENTY, THIRTY HOURS AT A TIME. THEIR FOOD, IF THEY ARRANGE IT, IS BROUGHT TO THEM: COFFEE, COKES, SANDWICHES. IF POSSIBLE, THEY SLEEP ON COTS NEAR THE COMPUTER. BUT ONLY FOR A FEW HOURS -- THEN BACK TO THE CONSOLE OR THE PRINTOUTS. THEIR RUMPLED CLOTHES, THEIR UNWASHED AND UNSHAVEN FACES, AND THEIR UNCOMBED HAIR ALL TESTIFY THAT THEY ARE OBLIVIOUS TO THEIR BODIES AND TO THE WORLD IN WHICH THEY MOVE. THEY EXIST, AT LEAST WHEN SO ENGAGED, ONLY THROUGH AND FOR THE COMPUTERS. THESE ARE THE COMPUTER BUMS, COMPULSIVE PROGRAMMERS. THEY ARE AN INTERNATIONAL PHENOMENON.

JOSEPH WEIZENBAUM, COMPUTER POWER AND HUMAN REASON, CHAP. 4, P. 116

TN / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(+	
5-	£										!	\$	*)	;	-
6-	-	/										,	%	_	>	?
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8-		a	b	c	d	e	f	g	h	i		{	≤	(+	†
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A-	-	°	s	t	u	v	w	x	y	z		L	Γ		≥	•
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F-	0	1	2	3	4	5	6	7	8	9						

This is a 10 pitch, upper- and lowercase character set of Roman design. It contains all the characters on the standard IBM TN print train. Note the extended serifs of the characters.

SUGGESTED FCB: TN prints best at 6 lines per inch.

SUGGESTED USE: This set can be used for 10 pitch printing at 6 lines per inch.

COMPARE: The characters of TN and TN10 should be compared: those of TN are much closer to the style of IBM's TN print train. The TN characters are the same height as those of TN10 and HY12, and are slightly taller than those of LW10.

CHARS=TN

FCB=8

I have argued that there is an aspect to the human mind, the unconscious, that cannot be explained by the information-processing primitives, the elementary information processes, which we associate with formal thinking, calculation, and systematic rationality. Yet we are constrained to use them for scientific explanation, description, and interpretation. It behooves us, therefore, to remain aware of the poverty of our explanations and of their strictly limited scope. It is wrong to assert that any scientific account of the "whole man" is possible. There are some things beyond the power of science to fully comprehend.

Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 8, p. 223

CHARS=TN

FCB=6

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Joseph Weizenbaum, Computer Power and Human Reason,

Chapter 8, p. 223

TN10 / 2 WCGMS

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
1-																
2-																
3-																
4-											¢	.	<	(+	
5-	£										!	\$	*)	;	-
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7-		^									`	:	#	@	'	=
8-		a	b	c	d	e	f	g	h	i		{	≤	(+	+
9-		j	k	l	m	n	o	p	q	r		}	≡)	±	■
A-	-	°	s	t	u	v	w	x	y	z		L	Γ	l	≥	•
B-	0	1	2	3	4	5	6	7	8	9		J	γ]	≠	—
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		S	¶			
E-	\		S	T	U	V	W	X	Y	Z						
F-	0	1	2	3	4	5	6	7	8	9						

This 10 pitch, Roman character set is a modification of the standard TN print train from IBM. It contains the same characters as the TN set, but the serifs have been reduced in TN10 in order to give it a less cluttered appearance.

SUGGESTED FCB: Can be used at 6 or 8 lines per inch, but FCB=6 is recommended.

SUGGESTED USE: This set is a possible choice when 10 pitch printing with a Roman typestyle is desired.

COMPARE: See TN, whose characters differ slightly in design. For printing at 6 lines per inch, compare this set with HY12. This set has a folded uppercase version, TF10, and is used in MT10.

The computer programmer, however, is a creator of universes for which he alone is the lawgiver. So, of course, is the designer of any game. But universes of virtually unlimited complexity can be created in the form of computer programs. Moreover, and this is the crucial point, systems so formulated and elaborated act out their programmed scripts. They compliantly obey their laws and vividly exhibit their obedient behavior. No playwright, no director, no emperor, however powerful, has ever exercised such absolute authority to arrange a stage or a field of battle and to command such unswervingly dutiful actors or troops.

Joseph Weizenbaum, Computer Power and Human Reason, p. 115

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Joseph Weizenbaum, Computer Power and Human Reason, p. 115

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-																
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9-	j	k	l	m	n	o	p	q	r		}	π)	±	▪	
A-	-	°	s	t	u	v	w	x	y	z	L	Γ	{	≥	•	
B-	0	1	2	3	4	5	6	7	8	9	↓	γ]	≠	-	
C-	{	A	B	C	D	E	F	G	H	I						
D-	}	J	K	L	M	N	O	P	Q	R		§	¶			
E-	\	S	T	U	V	W	X	Y	Z							
F-	0	1	2	3	4	5	6	7	8	9						

This is the 12 pitch version of SCIP's modification of the standard IBM TN print train. Note that the serifs have been reduced still further to allow printing at 8 lines per inch. TN12 contains the same characters as the TN set.

SUGGESTED FCB: 8 lines per inch is recommended.

SUGGESTED USE: Useful for upper- and lowercase printing at 12 pitch.

COMPARE: There is a folded, uppercase version of this set, TF12. Refer also to MT12, which uses the TN12 characters. Compare the design of these characters with those of TN10.

Perhaps the greatest contradiction in our lives, the hardest to handle, is the knowledge, "There was a time when I was not alive, and there will come a time when I am not alive." On the one level, when you "step out of yourself" and see yourself as "just another human being", it makes complete sense. But on another level, perhaps a deeper level, personal non-existence makes no sense at all. All that we know is embedded inside our minds, and for all that to be absent from the universe is not comprehensible. This is a basic undeniable problem of life; perhaps the best metaphorical analogue of Goedel's Theorem. When you try to imagine your own non-existence, you have to try to jump out of yourself, by mapping yourself into someone else.... though you may imagine that you have jumped out of yourself, you can never actually do so -- no more than Escher's dragon can jump out of its native two-dimensional plane into three dimensions. In any case, this contradiction is so great that most of our lives we just sweep the whole mess under the rug, because trying to deal with it just leads nowhere.

D. R. Hofstadter, Goedel, Escher, Bach

NY: Basic Books, 1979 p. 698

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NY: Basic Books, 1979 p. 698

```

-0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -A -B -C -D -E -F
0-
1-
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4-          c . < ( + |
5-  &          ! $ * ) ; ~
6-  - /          | , % _ > ?
7-  ^          ` : # @ ' = "
8-  a b c d e f g h i  { ≤ ( + +
9-  j k l m n o p q r  } π ) ± ■
A-  - ° s t u v w x y z  L Γ I ≥ •
B-  0 1 2 3 4 5 6 7 8 9  J j ı ≠ -
C-  { A B C D E F G H I
D-  } J K L M N O P Q R  S s
E-  \  S T U V W X Y Z
F-  0 1 2 3 4 5 6 7 8 9

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TN15 is a standard, 15 pitch character set. The letters are of Gothic design.

SUGGESTED FCB: Best at FCB=8; when used at 12 lines per inch, the superscript characters will not print fully.

SUGGESTED USE: Can be used for upper- and lowercase printing at 15 pitch.

COMPARE: Like TN10 and TN12, this set also has a folded, uppercase version: TF15. The characters of TN15 have been incorporated into the multiple set MT15.

Wherever computer centers have become established, that is to say, in countless places in the United States, as well as in virtually all other industrial regions of the world, bright young men of disheveled appearance, often with sunken glowing eyes, can be seen sitting at computer consoles, their arms tensed and waiting to fire their fingers, already poised to strike, at the buttons and keys on which their attention seems to be as riveted as a gambler's on the rolling dice. When not so transfixed, they often sit at tables strewn with computer printouts over which they pore like possessed students of a cabalistic text. They work until they nearly drop, twenty, thirty hours at a time. Their food, if they arrange it, is brought to them: coffee, Cokes, sandwiches. If possible, they sleep on cots near the computer. But only for a few hours -- then back to the console or the printouts. Their rumpled clothes, their unwashed and unshaven faces, and their uncombed hair all testify that they are oblivious to their bodies and to the world in which they move. They exist, at least when so engaged, only through and for the computers. These are the computer bums, compulsive programmers. They are an international phenomenon.

Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

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Joseph Weizenbaum, Computer Power and Human Reason, Chap. 4, p. 116

UP10 / 1 WCGM

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	+	.	<	>	+	|
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
2-	-	/	S	T	U	V	W	X	Y	Z		,	%	|	^	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
4-		A	B	C	D	E	F	G	H	I	+	.	<	>	+	|
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
6-	-	/	S	T	U	V	W	X	Y	Z		,	%	|	^	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
8-		A	B	C	D	E	F	G	H	I	+	.	<	>	+	|
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
A-	-	/	S	T	U	V	W	X	Y	Z		,	%	|	^	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"
C-		A	B	C	D	E	F	G	H	I	+	.	<	>	+	|
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	-
E-	-	/	S	T	U	V	W	X	Y	Z		,	%	|	^	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	'	=	"

This unusual character set is for printing vertically up a page. Its characters are 10 pitch and are of Gothic design. Note that it is folded uppercase, so all text printed with UP10 will be completely in uppercase. Text printed using this set will have the left-most column as its first line, and will read from bottom to top. When using this set, keep in mind the necessary adjustments; for example, with UP10, the lines per page specification means characters per line.

SUGGESTED FCB: 6 or 8 lines per inch; UP10 is more readable at FCB=8.

SUGGESTED USE: Use UP10 for printing vertically up a page. In most cases this set is more readable when used for single-line graphic effects than for blocks of text.

COMPARE: UP12 is this same set, but with 12 pitch characters. The DN10 and DN12 sets also allow vertical printing, except that they print down the page.

	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-A	-B	-C	-D	-E	-F
0-		A	B	C	D	E	F	G	H	I	Q	.	V	C	+	I
1-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	!
2-	-	/	S	T	U	V	W	X	Y	Z		.	%	_	>	?
3-	0	1	2	3	4	5	6	7	8	9	:	#	@	^	=	~
4-		A	B	C	D	E	F	G	H	I	Q	.	V	C	+	I
5-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	!
6-	-	/	S	T	U	V	W	X	Y	Z		.	%	_	>	?
7-	0	1	2	3	4	5	6	7	8	9	:	#	@	^	=	~
8-		A	B	C	D	E	F	G	H	I	Q	.	V	C	+	I
9-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	!
A-	-	/	S	T	U	V	W	X	Y	Z		.	%	_	>	?
B-	0	1	2	3	4	5	6	7	8	9	:	#	@	^	=	~
C-		A	B	C	D	E	F	G	H	I	Q	.	V	C	+	I
D-	&	J	K	L	M	N	O	P	Q	R	!	\$	*)	;	!
E-	-	/	S	T	U	V	W	X	Y	Z		.	%	_	>	?
F-	0	1	2	3	4	5	6	7	8	9	:	#	@	^	=	~

UP12 is a folded uppercase character set containing letters of Gothic design. With this set you can print your text vertically up the page. Hence the first row of text will be the left-most column of the text block. When using this set you are in effect turning the form (as it is normally used) on its side. As a folded uppercase set, UP12 prints entirely in majuscule letters.

SUGGESTED FCB: UP12 prints best when you specify FCB=8.

SUGGESTED USE: Use when you need to print vertically up the page with 12 pitch characters. Generally speaking, this set is more readable when used for single-line graphic effects than for blocks of text. Should you need assistance in using this set, speak with the 3800 consultant.

COMPARE: The set UP10 contains the same characters, except that they are 10 pitch. Texts printed with DN10 and DN12 also run vertically, but are read down the page.

CHARS=UP12

FCB=6

ME T IS
AH ET
MT AY-SET
U MAY-SET
HY RAY-SET
BYOYPO HEY
E RAY-SET
HDA IEHOP
TETHL E OES
NNTACBYCOG
OIEINI IS N
TAMNOETR II
LE IIIEDNH
TPLETT VEDT
CXETAN OTOD
PEE ARENPICEN
PEE IO MCME
SEHCOCIEIAOH
ADTOSHIL SE
NT SAKT YHER
AOSAKOTELER
NE EROTLA O
SNVET PCTIAO
IATWETPCTIAO
CT YERKERY
E THSHATIEL
ERTMC INMSCHL
EATID INMSCHL
HHRHNE INMSCHL
TTPWASDNLY
T G, AHAET
ASNSNO MT B
HULEOT E TIE
TOSSINRFA SC
ISSIDO OHSN
DCECAETIO TOE
ESCCINHTD PI
UNOOUH NT C
CORRCAT ARSS
ROBPRAT ET
AN- ATORSS F
UNOOUH NT C
E OO NEFOAN
VEIT ODEI AR
AHTTGC RTOMER
HTAAN EAT W
MTIENHN E O
I RRRKROTAGLP
DOONAT LNO
NEET T POHE
INNHEASXRWH
MTIENHN E O

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CHARS=UP12

FCB=8

HUMANE
HY MAY-SET
BYOYPO HEY
THE RAY-SET
TETHL E OES
NNTACBYCOG
OIEINI IS N
TAMNOETR II
LE IIIEDNH
TPLETT VEDT
CXETAN OTOD
PEE ARENPICEN
PEE IO MCME
SEHCOCIEIAOH
ADTOSHIL SE
NT SAKT YHER
AOSAKOTELER
NE EROTLA O
SNVET PCTIAO
IATWETPCTIAO
CT YERKERY
E THSHATIEL
ERTMC INMSCHL
EATID INMSCHL
HHRHNE INMSCHL
TTPWASDNLY
T G, AHAET
ASNSNO MT B
HULEOT E TIE
TOSSINRFA SC
ISSIDO OHSN
DCECAETIO TOE
ESCCINHTD PI
UNOOUH NT C
CORRCAT ARSS
ROBPRAT ET
AN- ATORSS F
UNOOUH NT C
E OO NEFOAN
VEIT ODEI AR
AHTTGC RTOMER
HTAAN EAT W
MTIENHN E O
I RRRKROTAGLP
DOONAT LNO
NEET T POHE
INNHEASXRWH
MTIENHN E O

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APPENDIX A : A LIST OF THE 3800 CHARACTER SETS BY TYPE

The following is a general listing of the character sets available for public use on the 3800 laser printer at SCIP. They fall under two main categories: those developed and implemented by the SCIP staff, and those which IBM included in the 3800 hardware. All the SCIP character sets listed here appear in the catalog. Four of the IBM character sets have been included in the catalog: GFC, GF10, GF12, and GF15.

Each entry begins with the name of the set which you would use when referencing that set in a PRINT command. Following the name, three important parameters for each set have been listed: the pitch, the FCB settings appropriate for that set, and the number of WCGM's the set employs. When an asterisk (*) appears in the FCB column, it indicates the recommended FCB setting for that character set.

I. SCIP SUPPORTED CHARACTER SETS

[A] FOLDED, UPPERCASE CHARACTER SETS

9 sets

BF10	--	10	6*/8	1	Folded, boldface uppercase set using characters from BD10
BF12	--	12	6/8	1	Folded, boldface uppercase set using characters from BD12
BF15	--	15	8*/12	1	Folded, boldface uppercase set using characters from BD15
IF10	--	10	6*/8	1	Folded, italic uppercase set using characters from IT10
IF12	--	12	6/8	1	Folded, italic uppercase set using characters from IT12
IF15	--	15	8*/12	1	Folded, italic uppercase set using characters from IT15
TF10	--	10	6*/8	1	Folded, Roman uppercase set using characters from TN10
TF12	--	12	6/8	1	Folded, Roman uppercase set using characters from TN12
TF15	--	15	8*/12	1	Folded, Roman uppercase set using characters from TN15

[B] STANDARD UPLOW CHARACTER SETS

16 sets

BD10	--	10	6/8	2	Upper- and lowercase letters and numerics in bold font.
BD12	--	12	6/8	2	Upper- and lowercase letters and numerics in bold font.
BD15	--	15	8*/12	2	Upper- and lowercase letters and numerics in bold font.
CU10	--	10	6/8	2	Courier style upper- and lowercase letters and numerics.
CU12	--	12	6/8	2	Courier style upper- and lowercase letters and numerics.
GB10	--	10	6*/8	2	Gothic letters and numerics in a bold font.
HY12	--	12	6*/8	2	Tall Gothic letters and numerics for printing at FCB=6.
IT10	--	10	6*/8	2	Upper- and lowercase letters and numerics in an italic font.
IT12	--	12	6/8	2	Upper- and lowercase letters and numerics in an italic font.
IT15	--	15	8*/12	2	Upper- and lowercase letters and numerics in an italic font.
LW10	--	10	6/8*	2	Shorter Roman letters and numerics for printing at FCB=8.
LW12	--	12	6/8*	2	Shorter letters and numerics for printing at FCB=8.
TN	--	10	6*/8	2	SCIP implementation of the IBM standard TN print train.
TN10	--	10	6*/8	2	Contains numerics and upper- and lowercase Roman letters.
TN12	--	12	8	2	Upper- and lowercase letters and numerics in a medium font.
TN15	--	15	8*/12	2	Upper- and lowercase letters and numerics in a medium font.

I. SCIP SUPPORTED CHARACTER SETS (continued)

[C] MULTIPLE CHARACTER SETS

5 sets

MH12	--	12	6/8	4	Combines characters from HY12, IT12, and BD12.
ML10	--	10	6/8*	4	Combines characters from LW10, IT10, and BD10.
MT10	--	10	6*/8	4	Combines characters from TN10, IT10, and BD10.
MT12	--	12	6/8	4	Combines characters from TN12, IT12, and BD12.
MT15	--	15	6/8	4	Combines characters from TN15, IT15, and BD15.

[D] SPECIAL CHARACTER SETS

6 sets

BG10	--	10	6	2	Uppercase set with large characters for titles and banners.
DN10	--	10	6/8*	1	Folded, Gothic uppercase set for printing down the page.
DN12	--	12	6/8*	1	Folded, Gothic uppercase set for printing down the page.
MA12	--	12	6	4	Special character set for mathematics, with letters from HY12.
UP10	--	10	6/8*	1	Folded, Gothic uppercase set for printing up the page.
UP12	--	12	6/8*	1	Folded, Gothic uppercase set for printing up the page.

[E] APL CHARACTER SETS

3 sets

AD10	--	10	6/8	4	Includes APL special characters, Roman and italic alphabets.
AI10	--	10	6*/8	3	Includes APL special characters and italic alphabets.
AP10	--	10	6*/8	3	Includes APL characters, Gothic uppercase, Roman lowercase.

[F] CHARACTER SETS FOR FORMATTING

5 sets

FM10	--	10	6*/8/12	1	Contains simple graphic characters in three different fonts.
FM12	--	12	6/8*/12	1	Contains simple graphic characters in three different fonts.
FM15	--	15	6/8/12*	1	Contains simple graphic characters in three different fonts.
FT10	--	10	6*/8	1	Includes simple and complex graphic characters for formatting.
FT12	--	12	6/8*	1	Includes simple and complex graphic characters for formatting.

II. IBM CHARACTER SETS

45 sets

AN	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
AOA	--	10	6/8	2	Contains OCR style A numerics and uppercase letters.
AOD	--	10	6/8	2	Contains Gothic uppercase letters and OCR style A numerics.
AON	--	10	6/8	2	Contains Gothic uppercase letters and OCR style A numerics.
All	--	10	6/8	1	Includes Gothic uppercase letters and numerics.
BOA	--	10	6/8	2	Contains OCR style B uppercase letters and numerics.
BON	--	10	6/8	2	Contains Gothic uppercase letters and OCR style B numerics.
DUMP	--	15	12	2	Contains Gothic uppercase letters and numerics.
GFC	--	15	12	1	Condensed, folded, Gothic numerics and uppercase letters.
GF10	--	10	6*/8	1	Folded, Gothic uppercase set, including numerics.
GF12	--	12	8	1	Folded, Gothic uppercase set, including numerics.
GF15	--	15	8	1	Folded, Gothic uppercase set, including numerics.
GN	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
GSC	--	15	12	1	A condensed set with Gothic numerics and uppercase letters.
GSFT	--	15	6/8	2	Contains numerics, Gothic uppercase, and ruling graphics.
GS10	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
GS12	--	12	6/8	1	Contains Gothic numerics and uppercase letters.
GS15	--	15	6/8	1	Contains Gothic numerics and uppercase letters.
GUC	--	15	12	1	Contains condensed, underscored Gothic numerics and uppercase.
GU10	--	10	6/8	1	Contains underscored Gothic numerics and uppercase letters.
GU12	--	12	6/8	1	Contains underscored Gothic numerics and uppercase letters.
GU15	--	15	6/8	1	Contains underscored Gothic numerics and uppercase letters.
G11	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
HN	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
H11	--	10	6/8	1	A Gothic uppercase set identical to HN.
KN1	--	10	6/8	2	Contains Gothic uppercase letters and katakana characters.
OAA	--	10	6*/8	2	Contains OCR style A numerics and uppercase letters.
OAB	--	10	6*/8	1	Contains OCR style B numerics and uppercase letters.
ODA	--	10	6*/8	2	Contains Gothic uppercase letters and OCR style A numerics.
ONA	--	10	6*/8	2	Contains Gothic uppercase letters and OCR style A numerics.
ONB	--	10	6*/8	2	Contains Gothic uppercase letters and OCR style B numerics.
PCAN	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
PCHN	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
PN	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
P11	--	10	6*/8	1	A Gothic uppercase set identical to PN.
QN	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
QNC	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
RN	--	10	6*/8	1	Contains Gothic numerics and uppercase letters.
SN	--	10	6/8	2	Contains Roman upper- and lowercase letters and numerics.
TU10	--	10	6/8	2	Underscored Roman upper- and lowercase letters and numerics.
T11	--	10	6/8	2	This is a Roman upper- and lowercase set identical to TN.
XN	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
YN	--	10	6/8	1	Contains Gothic numerics and uppercase letters.
2773	--	10	6/8	2	Contains Gothic numerics and large katakana characters.
2774	--	10	6/8	2	Contains Gothic uppercase and large katakana characters.



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APPENDIX B

These two charts summarize two important specifications for the forms available on the 3800 laser printer. The first chart lists the horizontal dimensions, measured in terms of characters per line, and the second lists the vertical dimensions, in terms of lines per page.

MAXIMUM CHARACTERS PER LINE			
FORMS	10 PITCH	12 PITCH	15 PITCH
1181	100	120	150
9511	85	102	127
1281	110	132	165
BLNK	138	166	204

MAXIMUM LINES PER PAGE			
FORMS	FCB = 6	FCB = 8	FCB = 12
1181	45	60*	90
9511	60*	80	120
1281	45	60*	90
BLNK	60*	80	120

*indicates the default FCB setting



APPENDIX C

The following table shows the relative density of the character sets available on the 3800 laser printer. It compares the amount of material that can fit on a page in terms of the various pitch (characters per inch) and FCB (lines per inch) settings. To make a comparison, select one setting in the column and one in the row and find the percentage in the box where they intersect. For example, if you compare TN12 at FCB=8 (column 5) to TN15 at FCB=6 (row 7), the percentage given is 7%: therefore, a page printed with TN12 at FCB=8 is 7% denser than a page with TN15 at FCB=6. On the other hand, TN12 at FCB=8 is 47% less dense (-47%) than GFC at FCB=12.

	**			**			**		
	10 PITCH	10 PITCH	10 PITCH	12 PITCH	12 PITCH	12 PITCH	15 PITCH	15 PITCH	15 PITCH
	FCB=6	FCB=8	FCB=12	FCB=6	FCB=8	FCB=12	FCB=6	FCB=8	FCB=12
10 PITCH FCB=6	0%	33%	100%	20%	60%	140%	50%	100%	200%
10 PITCH FCB=8	-25%	0%	50%	-10%	20%	80%	13%	50%	125%
10 PITCH ** FCB=12	-50%	-33%	0%	-40%	-20%	20%	-25%	0%	50%
12 PITCH FCB=6	-17%	11%	67%	0%	33%	100%	25%	67%	150%
12 PITCH FCB=8	-37%	-17%	25%	-25%	0%	50%	-6%	25%	88%
12 PITCH ** FCB=12	-58%	-44%	-17%	-50%	-33%	0%	-37%	-17%	25%
15 PITCH FCB=6	-33%	-11%	33%	-20%	7%	60%	0%	33%	100%
15 PITCH FCB=8	-50%	-33%	0%	-40%	-20%	20%	-25%	0%	50%
15 PITCH FCB=12	-67%	-56%	-33%	-60%	-47%	-20%	-50%	-33%	0%

**NOTE

For the sake of thoroughness, the relative density comparisons have been given for all possible pitch and FCB settings. Please note however that many letters of the 10, 12, and most 15 pitch character sets will not print fully at 12 lines per inch: at FCB=12 the superscript and subscript letters are cut off. It is recommended that you use the condensed character set, GFC, for printing at 12 lines per inch.

